

Series 10-SZ3000 5 Port Solenoid Valve

Series 10-SZ3000 / Plug-in Type



Model		Flat ribbon cable type 60P□			
		D-sub connector Type 60F	Type 60P	Type 60PG	Type 60PH
Manifold		Plug-in type			
1 (P: SUP), 3/5 (R: EXH) system		Common SUP, EXH			
Valve stations (With power terminal)		2 to 20 stations		2 to 16 stations	2 to 8 stations
Applicable connector		D-sub connector Conforming to MIL-C-24308 JIS-X-5101	Flat ribbon cable connector Socket: 26 pins MIL type with strain relief Conforming to MIL-C-83503	Flat ribbon cable connector Socket: 20 pins MIL type with strain relief Conforming to MIL-C-83503	Flat ribbon cable connector Socket: 10 pins MIL type with strain relief Conforming to MIL-C-83503
Internal wiring		+COM, -COM			
4(A), 2(B) port Porting specifications	Location	Valve			
	Direction	Lateral, Upward, Downward			
Port size	Metric	1(P), 3/5(R) port: ø8		4(A), 2(B) port: M5, ø4, ø6	
	Inch	1(P), 3/5(R) port: ø5/16"		4(A), 2(B) port: ø5/32", ø1/4"	

Series 10-SZ3000 / Non Plug-in Type



Model		Type 10-SS5Z3-60			
Manifold		Non plug-in type			
1 (P: SUP), 3/5 (R: EXH) system		Common SUP, EXH			
Valve stations		2 to 20 stations			
4(A), 2(B) port Porting specifications	Location	Valve			
	Direction	Lateral, Upward, Downward			
Port size	Metric	1(P), 3/5(R) port: ø8		4(A), 2(B) port: M5, ø4, ø6	
	Inch	1(P), 3/5(R) port: ø5/16"		4(A), 2(B) port: ø5/32", ø1/4"	

Series 10-SZ3000 / Serial Transmission Type



DeviceNet, CompoBus/D (OMRON Corp.)
OMRON Corp.: CompoBus/S System (16 output points)
OMRON Corp.: CompoBus/S System (8 output points)
Mitsubishi Electric Corp.: CC-LINK System
NKE Corp.: Uni-wire System
NKE Corp.: Uni-wire H System
SUNX Corp.: S-LINK System (16 output points)
SUNX Corp.: S-LINK System (8 output points)

Series 10-SZ3000

5 Port Solenoid
Valve Plug-in Type

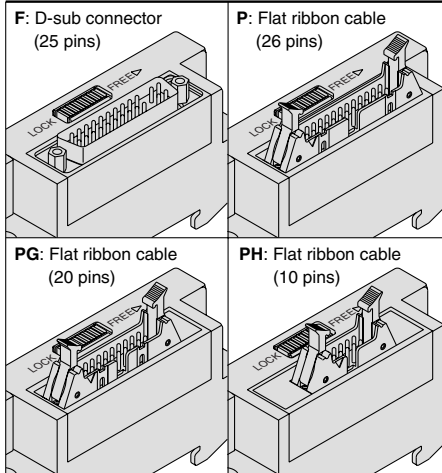
How to Order

• Plug-in manifold with power supply terminals

10-SS5Z3-60 F D 1 - 05 U - - P -

• Clean series

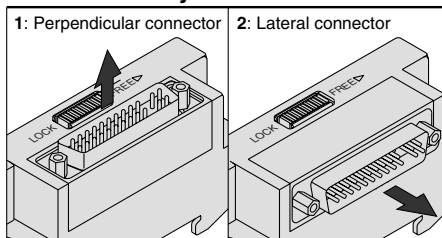
• Connector type



Connector mounting position

Symbol	Mounting position
D	D side

Connector entry direction



SUP/EXH block mounting position

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 20 stations)
M *	Special specifications

* For special specifications, indicate separately by the manifold specification sheet.
Note) A total of up to 3 SUP/ EXH blocks can be mounted. Please contact SMC if 4 or more will be mounted.

Pilot type

Nil	Internal pilot
R	External pilot

• Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required.

• Power supply terminals

Symbol	Specifications
P	24 VDC, Positive common
P12	12 VDC, Positive common
N	24 VDC, Negative common
N12	12 VDC, Negative common

• SUP/EXH block fitting specifications

Nil	Straight
L	Elbow fittings (Upward)
B	Elbow fittings (Downward)

• Valve stations

F: D-sub connector

Symbol	Stations	Note
02	2 stations	Double wiring specifications ^{Note 1)}
:	:	
10	10 stations	Specified layout ^{Note 2)} (Up to 21 solenoids possible)
02	2 stations	
:	:	
20	20 stations	

P: Flat ribbon cable connector (26 pins)

Symbol	Stations	Note
02	2 stations	Double wiring specifications
:	:	
11	11 stations	Specified layout (Up to 22 solenoids possible)
02	2 stations	
:	:	
20	20 stations	

PG: Flat ribbon cable connector (20 pins)

Symbol	Stations	Note
02	2 stations	Double wiring specifications
:	:	
08	8 stations	Specified layout (Up to 16 solenoids possible)
02	2 stations	
:	:	
16	16 stations	

PH: Flat ribbon cable connector (10 pins)

Symbol	Stations	Note
02	2 stations	Double wiring specifications
:	:	
04	4 stations	Specified layout (Up to 8 solenoids possible)
02	2 stations	
:	:	
08	8 stations	

Note 1) Double wiring specifications: Single, double, 3 position and 4 position solenoid valves can be used at all of the manifold stations.
Note 2) Specified layout: Indicate wiring specifications on a manifold specification sheet.
(Please note that in locations where single solenoid wiring is indicated, it will be impossible to use double or 3 position / 4 position valves.)

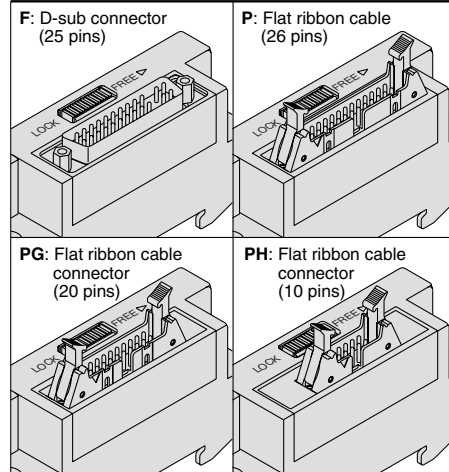
How to Order

• Plug-in manifold without power supply terminals

10-SS5Z3-60 **F** **D** **1** - **05** **U** -

• Clean series

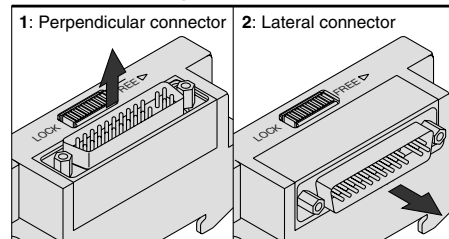
• Connector type



• Connector mounting position

Symbol	Mounting position
D	D side

• Connector entry direction



• SUP/EXH block mounting position

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 20 stations)
M *	Special specifications



* For special specifications, indicate separately by the manifold specification sheet.
 Note) A total of up to 3 SUP/ EXH blocks can be mounted. Please contact SMC if 4 or more will be mounted.

• Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required.

• SUP/EXH block fitting specifications

Nil	Straight
L	Elbow fittings (Upward)
B	Elbow fittings (Downward)

• Pilot type

Nil	Internal pilot
R	External pilot

• Valve stations

F: D-sub connector

Symbol	Stations	Note
02	2 stations	Double wiring ^{Note 1)} specifications
:	:	
12	12 stations	Specified layout ^{Note 2)} (Up to 24 solenoids possible)
02	2 stations	
:	:	
20	20 stations	

P: Flat ribbon cable connector (26 pins)

Symbol	Stations	Note
02	2 stations	Double wiring specifications
:	:	
12	12 stations	Specified layout (Up to 25 solenoids possible)
02	2 stations	
:	:	
20	20 stations	

PG: Flat ribbon cable connector (20 pins)

Symbol	Stations	Note
02	2 stations	Double wiring specifications
:	:	
09	9 stations	Specified layout (Up to 19 solenoids possible)
02	2 stations	
:	:	
19	19 stations	

PH: Flat ribbon cable connector (10 pins)

Symbol	Stations	Note
02	2 stations	Double wiring specifications
:	:	
04	4 stations	Specified layout (Up to 9 solenoids possible)
02	2 stations	
:	:	
09	9 stations	



Note 1) Double wiring specifications: Single, double, 3 position and 4 position solenoid valves can be used at all of the manifold stations.

Note 2) Specified layout: Indicate wiring specifications on a manifold specification sheet. (Please note that in locations where single solenoid wiring is indicated, it will be impossible to use double or 3 position / 4 position valves.)

How to Order

- How to order solenoid valves For plug-in (Common for both with and without power supply terminals)

10 - SZ3 1 60 - 5 LOZ - C6

• Clean series

Type of actuation

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

• Rated voltage

5	24 VDC
6	12 VDC

- When using on a manifold with power supply terminals, be sure to match with the manifold's voltage specifications.

• Back pressure check valve

Nil	None
K	Built-in

- The built-in back pressure check valve type has an effective area approximately 20% smaller.
- The 3 position solenoid valves are not available with back pressure check valve.

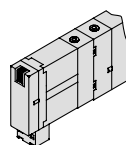
• Pilot type

Nil	Internal pilot
R	External pilot

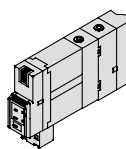
- The 4 position dual 3 port valve is not available with external pilot specifications.

• Switch specifications

Nil: Without switch



J: With switch



* For switch operation, refer to page 354.

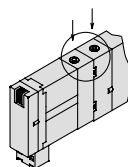
• Common specifications

Nil	Positive common
N	Negative common

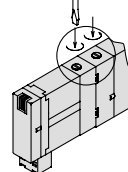
- When using on a manifold with power supply terminals, be sure to match with the manifold's common specifications.

Manual override

Nil: Non-locking push type

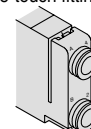


D: Push-turn locking slotted type

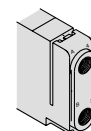


• A, B port size

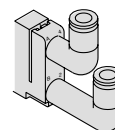
C4: One-touch fitting for $\phi 4$
C6: One-touch fitting for $\phi 6$
N3: One-touch fitting for $\phi 5/32$ "
N7: One-touch fitting for $\phi 1/4$ "



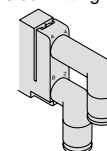
M5: M5 x 0.8



Elbow fitting assembly (Upward)
L4: $\phi 4$ elbow fitting assembly
L6: $\phi 6$ elbow fitting assembly



Elbow fitting assembly (Downward)
B4: $\phi 4$ elbow fitting assembly
B6: $\phi 6$ elbow fitting assembly



How to Order Valve Manifold Assembly

Ordering example (10-SZ3000, positive common with power supply terminals)



Double solenoid (24 VDC)

10-SZ3260-5LOZ-C6 (3 sets)

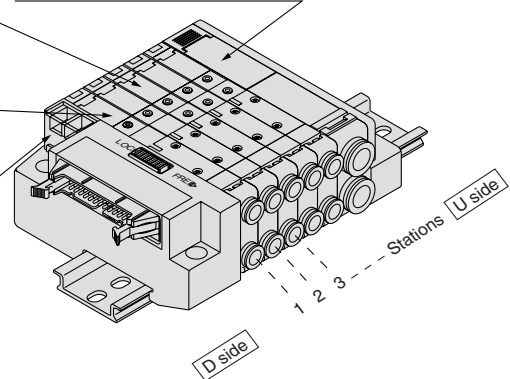
SUP/EXH block (U-side mounting)

Single solenoid (24 VDC)

10-SZ3160-5LOZ-C6 (2 sets)

With power supply terminals
Plug-in manifold

10-SS5Z3-60PD2-05U-P



10-SS5Z3-60PD2-05U-P 1 set (Manifold part no.)
 * **10-SZ3160-5LOZ-C6** 2 sets (Single solenoid part no.)
 * **10-SZ3260-5LOZ-C6** 3 sets (Double solenoid part no.)

→The asterisk denotes the symbol for assembly.
 Prefix to the part no. of the solenoid valve, etc.

Stations are counted from D side as the 1st one.

Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing. When entry of part numbers becomes complicated, indicate on the manifold specification sheet.



Made to Order Specifications
 (For details, refer to page 353.)

Manifold Specifications

Model		D-sub connector Type 60F	Flat ribbon cable type 60P□		
			Type 60P	Type 60PG	Type 60PH
Manifold		Plug-in type			
1 (P: SUP), 3/5 (R: EXH) system		Common SUP, EXH			
Valve stations (With power terminal)		2 to 20 stations		2 to 16 stations	2 to 8 stations
Applicable connector		D-sub connector Conforming to MIL-C-24308 JIS-X-5101	Flat ribbon cable connector Socket: 26 pins MIL type with strain relief Conforming to MIL-C-83503	Flat ribbon cable connector Socket: 20 pins MIL type with strain relief Conforming to MIL-C-83503	Flat ribbon cable connector Socket: 10 pins MIL type with strain relief Conforming to MIL-C-83503
Internal wiring		+COM, -COM			
4(A), 2(B) port		Valve			
Porting specifications		Direction			
		Lateral, Upward, Downward			
Port size	Metric	1 (P), 3/5(R) port: ø8		4 (A), 2(B) port: M5, ø4, ø6	
	Inch	1 (P), 3/5(R) port: ø5/16"		4 (A), 2(B) port: ø5/32", ø1/4"	
Weight W (g) (n₁: Stations n₂: Number of SUP/EXH blocks m: Weight of DIN rail)		W=3.2n ₁ +53n ₂ +m+126.5			



Note 1) In cases such as those where many valves are operated simultaneously, use type B (double side SUP/EXH), applying pressure to the 1(P) ports on both sides and exhausting from the 3(R) ports on both sides.

Note 2) The weight W is the value for the D-sub connector manifold with power supply terminals only. To obtain the weight with solenoid valves attached, add the solenoid valve weights given on page 330 for the appropriate number of stations. For DIN rail weight, refer to page 332.

Flow Characteristics

Port size		Flow characteristics					
1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→2/4(P→A/B)			4/2→(A/B→R)		
		C[dm ³ /(s·bar)]	b	Cv	C[dm ³ /(s·bar)]	b	Cv
C8	C4	0.58[0.49]	0.26[0.36]	0.14[0.13]	0.76[0.65]	0.15[0.20]	0.18[0.15]
	C6	0.73[0.64]	0.24[0.27]	0.18[0.16]	0.77[0.74]	0.19[0.16]	0.19[0.19]
	M5	0.60[0.57]	0.38[0.35]	0.17[0.15]	0.67[0.58]	0.16[0.39]	0.16[0.16]



Note) · The value is for manifold base with 5 stations and individually operated 2 position type.
 · Values inside [] are for 4 position dual 3 port valves.

Solenoid Valve Specifications

Series			10-SZ3000
Fluid			Air
Internal pilot operating pressure range (MPa)	2 position single		0.15 to 0.7
	2 position double		0.1 to 0.7
	3 position		0.2 to 0.7
	4 position dual 3 port valve		0.15 to 0.7
External pilot operating pressure range (MPa)	Operating pressure range		−100 kPa to 0.7
	Pilot pressure range	2 position single	0.25 to 0.7
		2 position double	0.25 to 0.7
		3 position	0.25 to 0.7
Ambient and fluid temperature (°C)			−10 to 50 (No freezing. Refer to page 714.)
Max. operating frequency (Hz)	2 position single, double 4 position dual 3 port valve		10
	3 position		3
Manual override (Manual operation)			Non-locking push type, Push-turn locking slotted type
Pilot type			Common exhaust type for main and pilot valve
Lubrication			Not required
Mounting orientation			Unrestricted
Impact/Vibration resistance m/s ² Note)			150/30
Enclosure			Dust-protected



Note) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Solenoid Specifications

Electrical entry	L type (For plug-in), M type plug connector (M)
Coil rated voltage (V) (Note)	24, 12, 6, 5, 3 DC
Allowable voltage fluctuation	±10% of rated voltage
Power consumption (W)	0.6 (With light: 0.65)
Surge voltage suppressor	Diode
Indicator light	LED



Note) Only 24 VDC and 12 VDC are available for plug-in use.

Response Time

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

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)	
	Without surge voltage suppressor	With surge voltage suppressor
		S, Z type
2 position single	12 or less	15 or less
2 position double	10 or less	13 or less
3 position	15 or less	20 or less
4 position dual 3 port valve	30 or less	35 or less

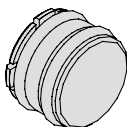
Weight

Valve model	Type of actuation		Port size 4(A), 2(B)	Weight (g)
10-SZ3□60-□-C4 N3	2 position	Single	C4 N3 (One-touch fitting for ø4, ø5/32")	78
		Double		84
	3 position	Closed center		88
		Exhaust center		
		Pressure center		
	4 position	Dual 3 port valve		84
10-SZ3□60-□-C6 N7	2 position	Single	C6 N7 (One-touch fitting for ø6, ø1/4")	74
		Double		81
	3 position	Closed center		85
		Exhaust center		
		Pressure center		
	4 position	Dual 3 port valve		81
10-SZ3□60-□-M5	2 position	Single	M5 x 0.8	69
		Double		75
	3 position	Closed center		79
		Exhaust center		
		Pressure center		
	4 position	Dual 3 port valve		75

Manifold Option

■SUP block disk

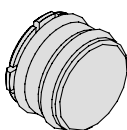
By installing a SUP block disk in the pressure supply passage of a manifold valve, it is possible to supply two or more different high and low pressures to one manifold. (Use in combination with a pilot port block disk.)



Series	Part no.
10-SZ3000	SZ3000-114-4A

■EXH block disk

By installing an EXH block disk in the exhaust passage of a manifold valve, it is possible to divide the valve's exhaust so that it does not affect another valve. (Two block disks are needed to divide both exhausts.)



Series	Part no.
10-SZ3000	SZ3000-114-4A

■Pilot port block disk

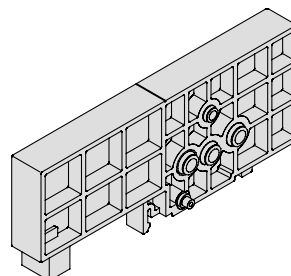
By installing a pilot port block disk in the pilot passage of a manifold valve, it can be function as an internal pilot/external pilot mixed manifold. (Use in combination with a SUP or EXH block disk.)



Series	Part no.
10-SZ3000	SZ3000-114-2A

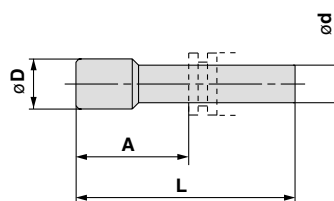
■Blanking block assembly SZ3000-55-1A

These are mounted when later addition of valves is planned, etc.



■Plug (White)

These are inserted in cylinder ports or SUP/EXH ports which are not being used. Purchasing order is available in units of 10 pieces.



Dimensions

Applicable fitting size ϕd	Model	A	L	D
4	10-KQP-04	16	32	$\phi 6$
6	10-KQP-06	18	35	$\phi 8$
8	10-KQP-08	20.5	39	$\phi 10$
5/32"	10-KQP-03	16	32	$\phi 6$
1/4"	10-KQP-07	18	35	$\phi 8.5$
5/16"	10-KQP-09	20.5	39	$\phi 10$

Air cylinder

Rotary actuator

Air gripper

Directional control valve

Flow control equipment

Filter, Pressure control equipment

Fittings & Tubing

Air preparation equipment

Pressure switch

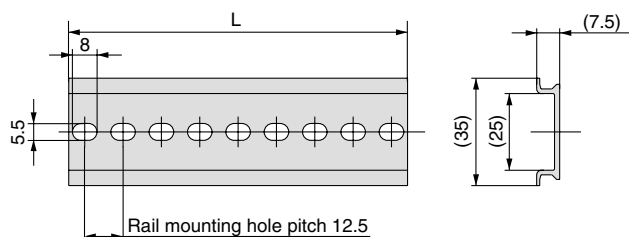
Clean gas filter

Manifold Option

■DIN rail dimensions / Weight

VZ1000-11-1-

- Refer to the L dimension tables
- * Enter a number from the DIN rail dimension table below.

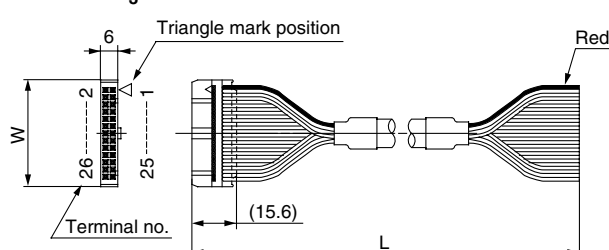


No.	0	1	2	3	4	5	6	7	8	9
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5
Weight (g)	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9

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)	62.6	64.9	67.1	69.4	71.6	73.9	76.1	78.4	80.6	82.9

■Flat ribbon cable type / Cable assembly

AXT100-FC


Flat Ribbon Cable Assembly

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

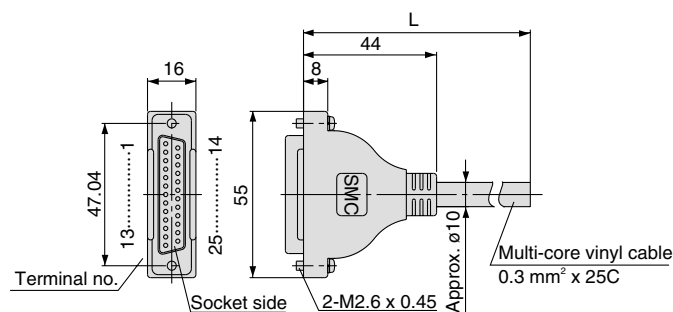
* For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.

Connector manufacturers' example

- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

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

AXT100-DS25-

015
030
050


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

D-sub Connector Cable Assembly

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable 25 cores x 24AWG
3 m	AXT100-DS25-030	
5 m	AXT100-DS25-050	

* For other commercial connectors, use a 25 pins type with female connector conforming to MIL-C-24308.

Connector manufacturers' example

- Hirose Electric Co., Ltd.
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

Electric Characteristics

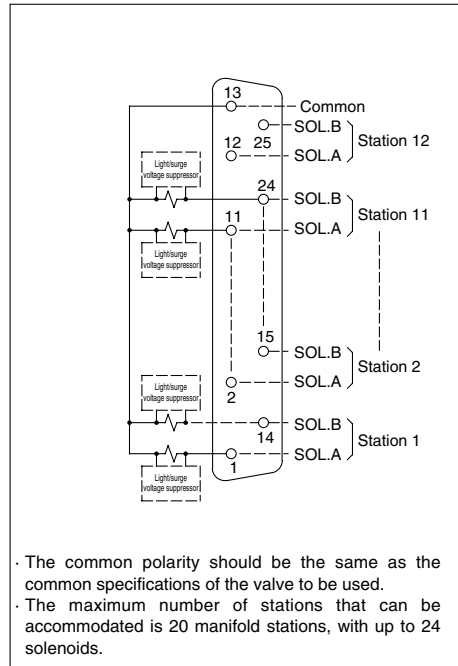
Item	Characteristics
Conductor resistance Ω/km, 20°C	65 or less
Withstand limit VAC, 1min.	1000
Insulation resistance MΩkm, 20°C	5 or less

Note) The minimum bending radius for D-sub connector cables is 20 mm.

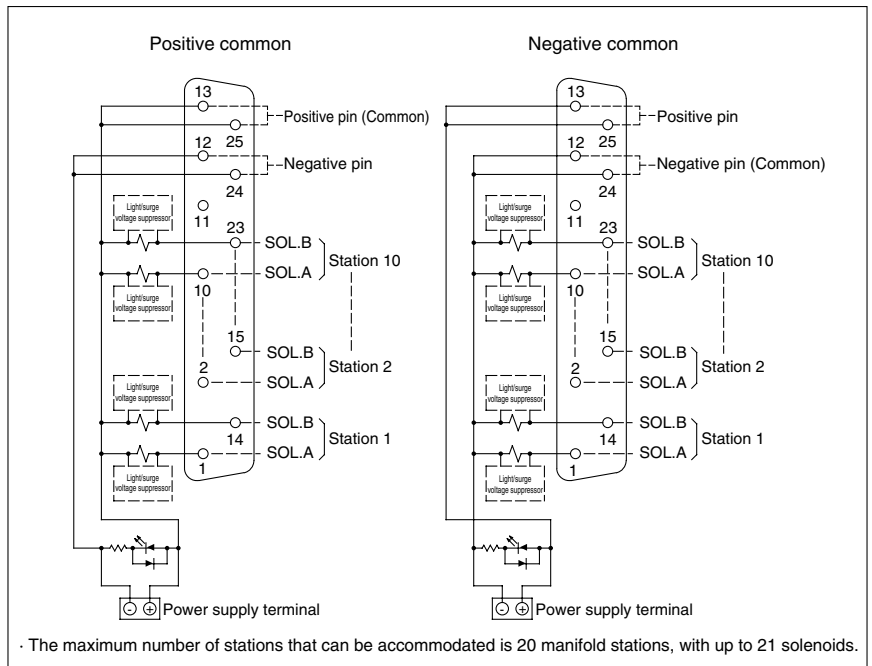
Manifold Electrical Wiring

Type 60F D-sub Connector (25 pins)

• Without power supply terminal



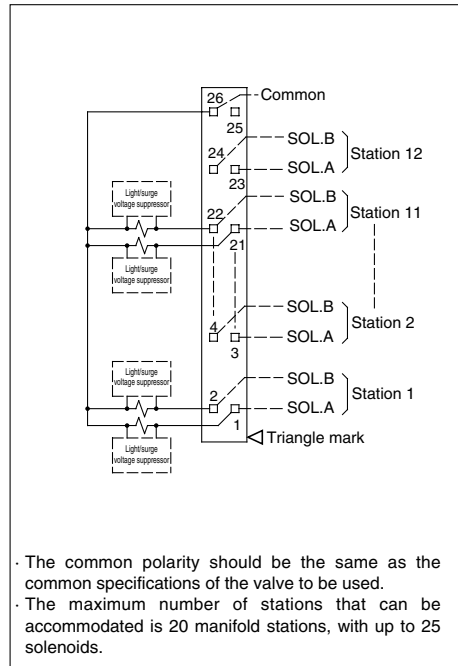
• With power supply terminal



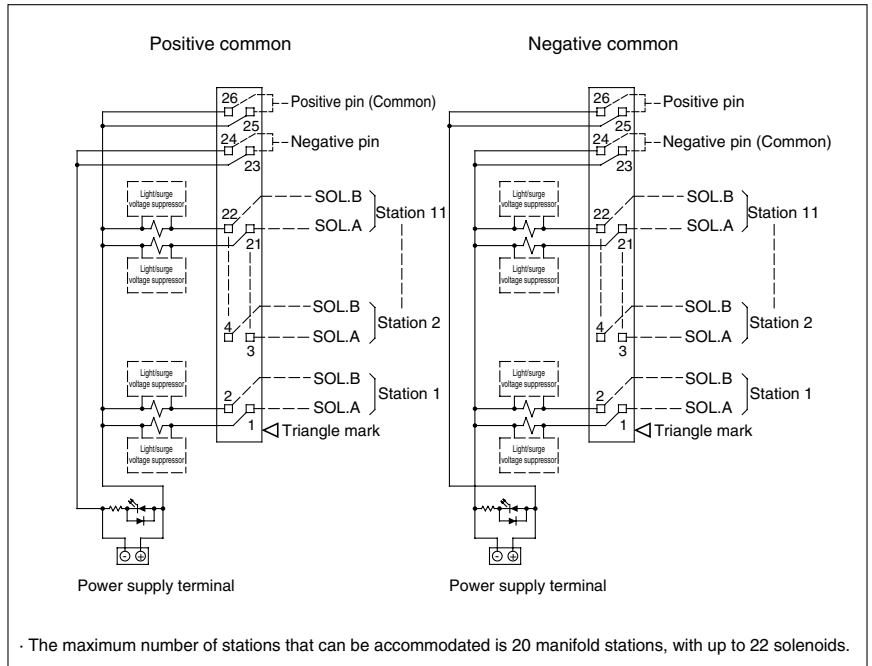
- The circuits above are for the double wiring specifications with up to 10 or 12 stations. Connect to SOL. A in the case of a single solenoid. Moreover, when wiring instructions are given on a manifold specification sheet, the "A" signal for single and the "A, B" signals for double should be wired in order 1, 14, 2, 15.....etc., without skipping or leaving any connectors remaining.
- Stations are counted from D side as the 1st one.

Type 60P Flat Ribbon Cable (26 pins)

• Without power supply terminal



• With power supply terminal

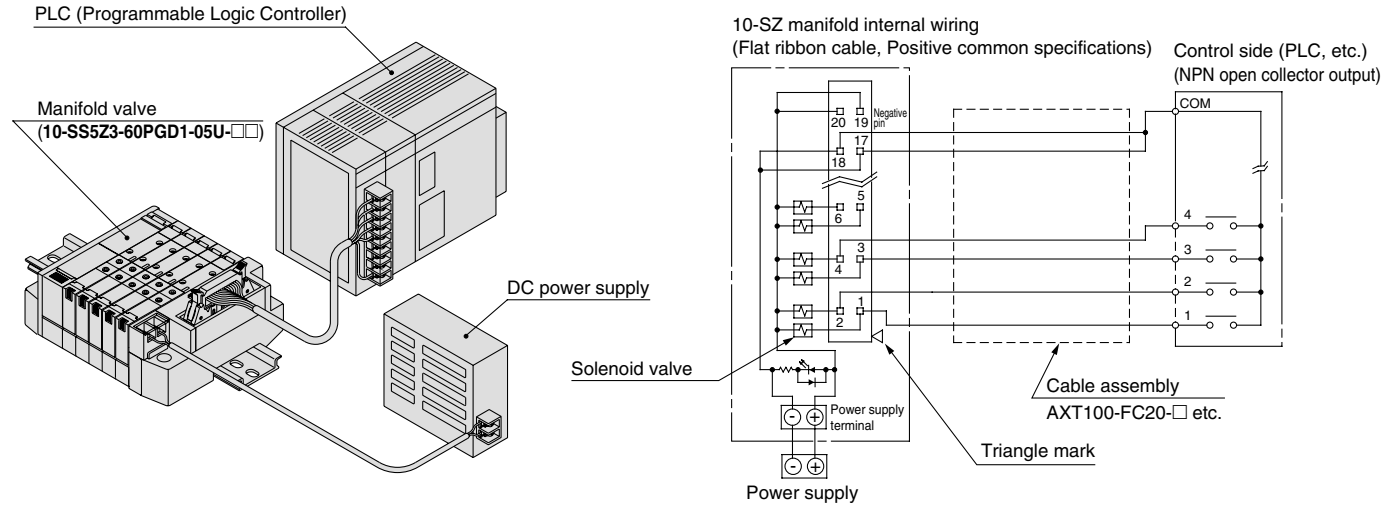


- The circuits above are for the double wiring specifications with up to 11 or 12 stations. Connect to SOL. A in the case of a single solenoid. Moreover, when wiring instructions are given on a manifold specification sheet, the "A" signal for single and the "A, B" signals for double should be wired in order 1, 2, 3, 4.....etc., without skipping or leaving any connectors remaining.
- Stations are counted from D side as the 1st one.
- Since terminal numbers are not indicated on the flat cable, use the triangle mark as a reference for wiring.

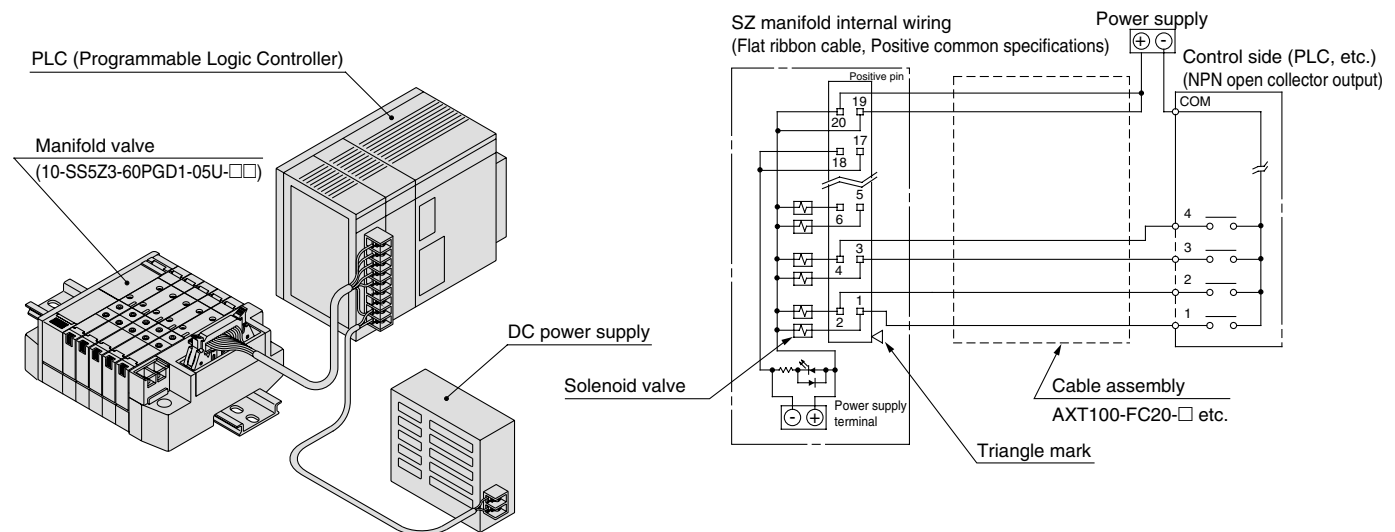
Wiring of Plug-in Type Manifold with Power Supply Terminal (Example)

- Since the power supply to drive valves with power supply terminals can be supplied from either the control side or the manifold side, these wiring examples should be used for reference when wiring is performed.

1. Wiring example when using manifold power supply terminal



2. Wiring example when not using manifold power supply terminal (Power is supplied to the control side or along the wiring, etc.)

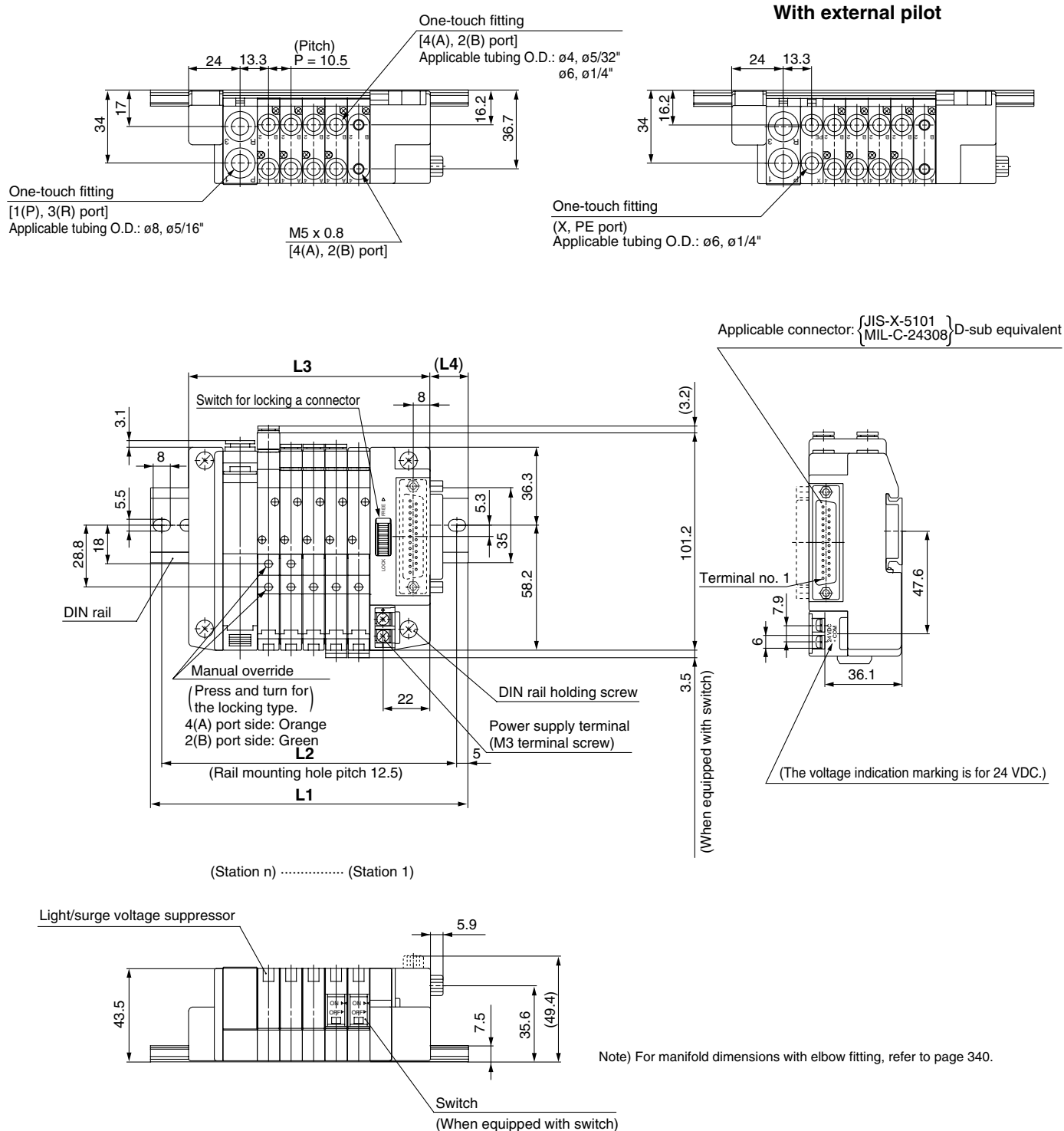


⚠ Caution

- Single wire, COM position, etc. of PLC are different from each manufacturer. When connecting with PLC, read the specifications carefully and understand the electrical circuit. Poor wiring could cause damage to PLC, power source, etc. as well as manifold and valve.

Dimensions: 10-SZ3000 Plug-in

10-SS5Z3-60FD_{1/2} - Stations **U**-□



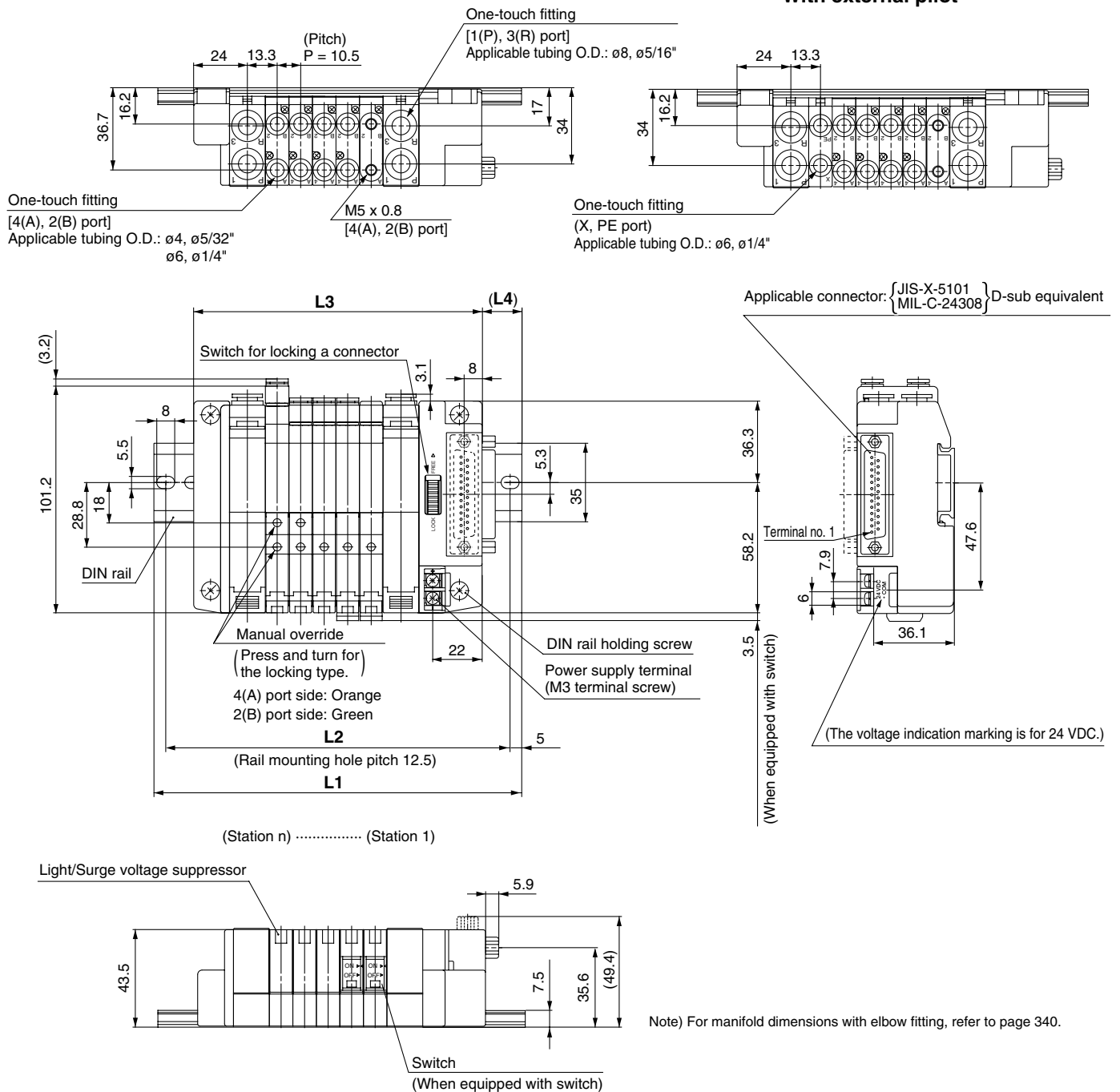
Note) For manifold dimensions with elbow fitting, refer to page 340.

Internal Pilot Manifold L Dimension n: Stations (n1 + n2)

L _n	2	3	4	5	6	7	8	9	10
L1	110.5	123	135.5	148	148	160.5	173	185.5	198
L2	100	112.5	125	137.5	137.5	150	162.5	175	187.5
L3	81	91.5	102	112.5	123	133.5	144	154.5	165
L4	15	16	17	18	12.5	13.5	14.5	15.5	16.5

External Pilot Manifold L Dimension n: Stations (n1 + n2)

L _n	2	3	4	5	6	7	8	9	10
L1	123	135.5	148	148	160.5	173	185.5	198	210.5
L2	112.5	125	137.5	137.5	150	162.5	175	187.5	200
L3	91.5	102	112.5	123	133.5	144	154.5	165	175.5
L4	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5

Dimensions: 10-SZ3000 Plug-in**10-SS5Z3-60FD¹/₂ - Stations B-□****Internal Pilot Manifold L Dimension**

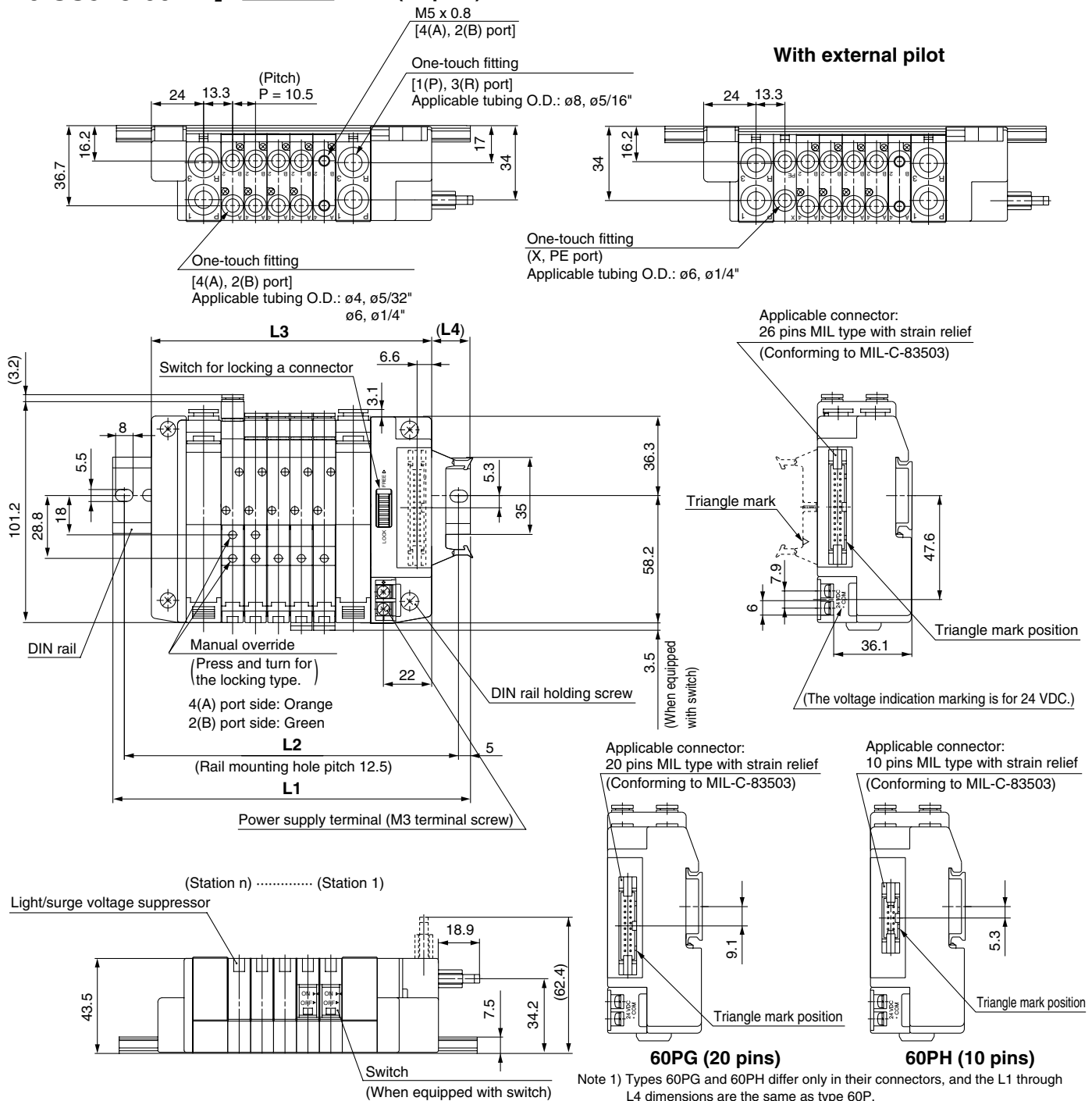
n: Stations (n1 + n2)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5
L2	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300
L3	97	107.5	118	128.5	139	149.5	160	170.5	181	191.5	202	212.5	223	233.5	244	254.5	265	275.5	286
L4	13	14	15	16	17	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5	12.5

External Pilot Manifold L Dimension

n: Stations (n1 + n2)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323
L2	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300	312.5
L3	107.5	118	128.5	139	149.5	160	170.5	181	191.5	202	212.5	223	233.5	244	254.5	265	275.5	286	296.5
L4	14	15	16	17	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5

Dimensions: 10-SZ3000 Plug-in**10-SS5Z3-60PD₁ - Stations B-□ (26 pins)****Internal Pilot Manifold L Dimension**

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5
L2	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300
L3	97	107.5	118	128.5	139	149.5	160	170.5	181	191.5	202	212.5	223	233.5	244	254.5	265	275.5	286
L4	13	14	15	16	17	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5	12.5

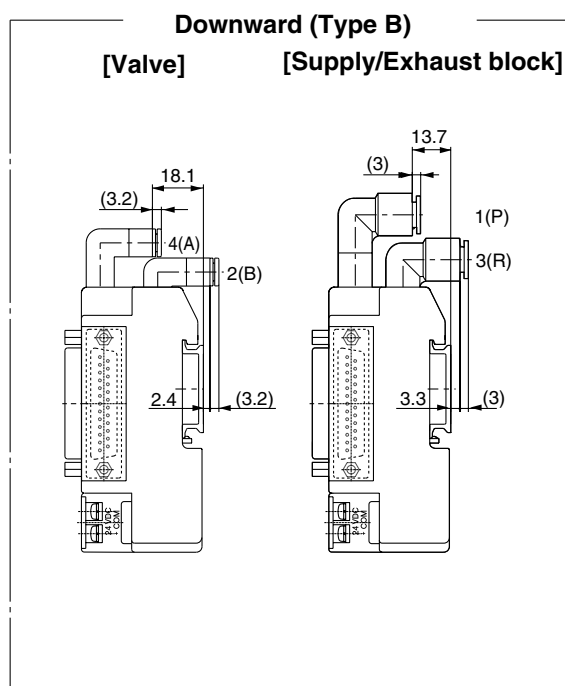
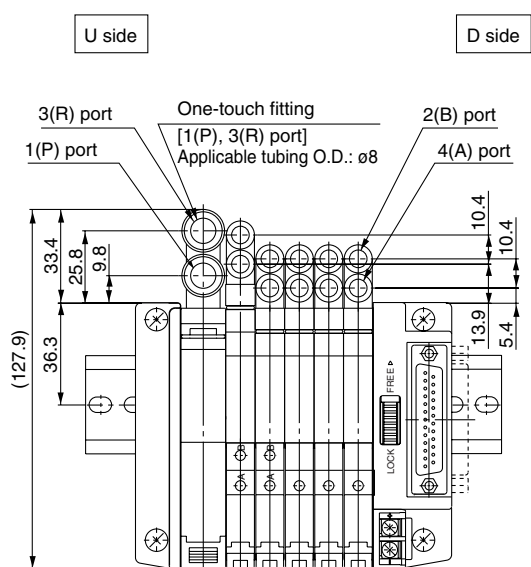
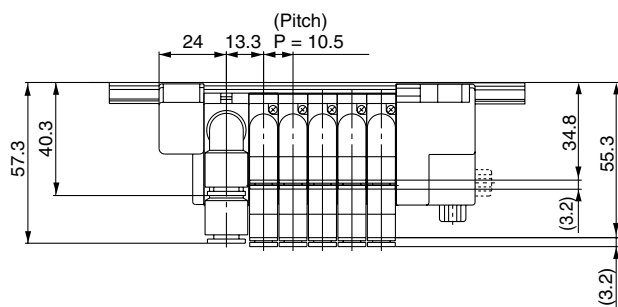
External Pilot Manifold L Dimension

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323
L2	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300	312.5
L3	107.5	118	128.5	139	149.5	160	170.5	181	191.5	202	212.5	223	233.5	244	254.5	265	275.5	286	296.5
L4	14	15	16	17	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5

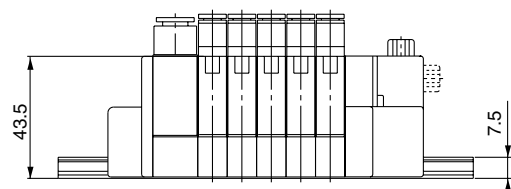
Dimensions with Elbow Fitting: 10-SZ3000 Plug-in, D-sub Connector

10-SS5Z3-60FD₂ - Stations **U_B** - □

(The fitting dimension of the flat cable and non plug-in types is the same.)



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



Series 10-SZ3000

5 Port Solenoid Valve
Non Plug-in Type

How to Order

• Non plug-in manifold

10-SS5Z3-60 - 05 U - -

- Clean series**
- Stations**

02	2 stations
⋮	⋮
20	20 stations
- SUP/EXH block mounting position**

D	D side (2 to 10 stations)
U	U side (2 to 10 stations)
B	Both sides (2 to 20 stations)
M *	Special specifications

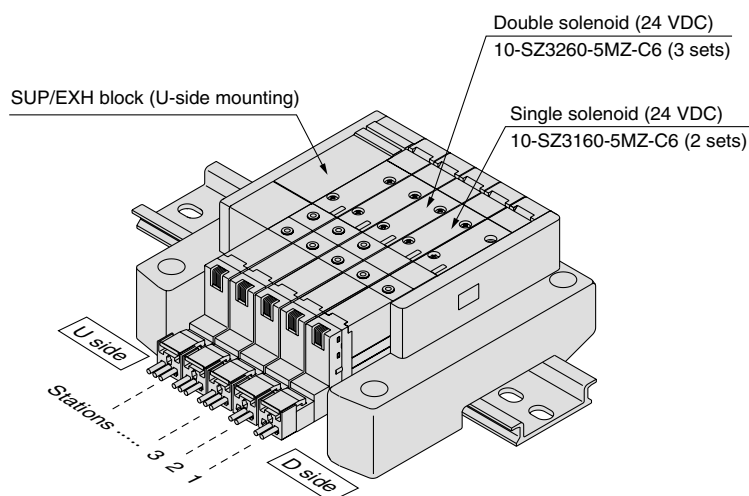
* For special specifications, indicate separately by the manifold specification sheet.
- Option**
When a longer DIN rail is desired than the specified stations, specify the station number to be required.
- SUP/EXH block fitting specifications**

Nil	Straight
L	Elbow type (Upward)
B	Elbow type (Downward)
- Pilot type**

Nil	Internal pilot
R	External pilot

How to Order Valve Manifold Assembly

Ordering example (10-SZ3000, Non plug-in)



10-SS5Z3-60-05U.....1 set (Manifold part no.)
 * **10-SZ3160-5MZ-C6**.....2 sets (Single solenoid part no.)
 * **10-SZ3260-5MZ-C6**.....3 sets (Double solenoid part no.)

→The asterisk denotes the symbol for assembly. Prefix to the part no. of the solenoid valve, etc.

Stations are counted from D side as the 1st one.
 Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing.
 When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

How to Order

10-SZ3 **1** **60** **-** **5** **M** **-** **C6**

• Clean series

Type of actuation

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

Pilot type

Nil	Internal pilot
R	External pilot

- The 4 position dual 3 port valve is not available with external pilot specifications.

Back pressure check valve

Nil	None
K	Built-in

- The built-in back pressure check valve type has an effective area approximately 20% smaller.
- The 3 position solenoid valves are not available with back pressure check valve.

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

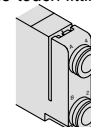
Common specifications

Nil	Positive common
N	Negative common

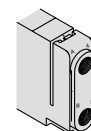
- The symbol is "Nil" when not equipped with light/surge voltage suppressor.

A, B port size

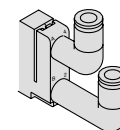
C4: One-touch fitting for ø4
 C6: One-touch fitting for ø6
 N3: One-touch fitting for ø5/32"
 N7: One-touch fitting for ø1/4"



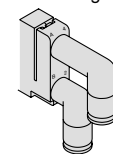
M5: M5 x 0.8



Elbow fitting assembly (Upward)
 L4: ø4 elbow fitting assembly
 L6: ø6 elbow fitting assembly

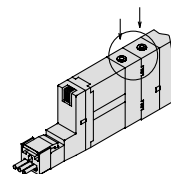


Elbow fitting assembly (Downward)
 B4: ø4 elbow fitting assembly
 B6: ø6 elbow fitting assembly

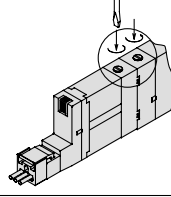


Manual override

Nil: Non-locking push type



D: Push-turn locking slotted type

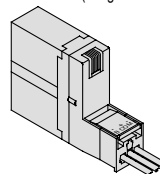


Light/Surge voltage suppressor

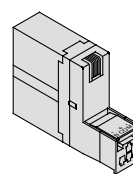
Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor

Electrical entry

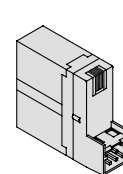
M: With lead wire (Length 300 mm)



MN: Without lead wire



MO: Without connector



Manifold Specifications



Made to Order Specifications
(For details, refer to page 353.)

Model		Type 10-SS5Z3-60	
Manifold		Non plug-in type	
1 (P: SUP), 3/5 (R: EXH) system		Common SUP, EXH	
Valve stations		2 to 20 stations	
4(A), 2(B) port Porting specifications	Location	Valve	
	Direction	Lateral, Upward, Downward	
Port size	Metric	1(P), 3/5(R) port: ø8	4(A), 2(B) port: M5, ø4, ø6
	Inch	1(P), 3/5(R) port: ø5/16"	4(A), 2(B) port: ø5/32", ø1/4"
Weight W (g) ^{Note 2)} (n: Number of SUP/EXH blocks m: Weight of DIN rail)		W=34n+m+89	



Note 1) In cases such as those where many valves are operated simultaneously, use type B (double side SUP/EXH), applying pressure to the 1(P) ports on both sides and exhausting from the 3(R) ports on both sides.

Note 2) The weight W is the value for the manifold only. To obtain the weight with solenoid valves attached, add the solenoid valve weights given on page 330 for the appropriate number of stations. For DIN rail weight, refer to page 332.

Flow Characteristics

Port size		Flow characteristics					
1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→2/4 (P→A/B)			4/2→3 (A/B→R)		
		C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv
C8	C4	0.58[0.49]	0.26[0.36]	0.14[0.13]	0.76[0.65]	0.15[0.20]	0.18[0.15]
	C6	0.73[0.64]	0.24[0.27]	0.18[0.16]	0.77[0.74]	0.19[0.16]	0.19[0.19]
	M5	0.60[0.57]	0.38[0.35]	0.17[0.15]	0.67[0.58]	0.16[0.39]	0.16[0.16]



Note) · The value is for manifold base with 5 stations and individually operated 2 position type.
· Values inside [] are for 4 position dual 3 port valves.

Air cylinder

Rotary actuator

Air gripper

Directional control valve

Flow control equipment

Filter, Pressure control equipment

Fittings & Tubing

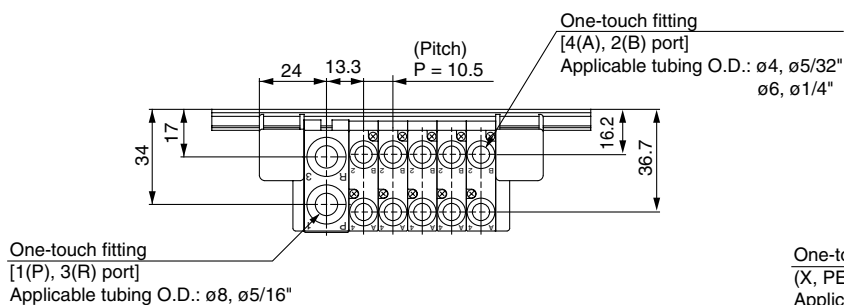
Air preparation equipment

Pressure switch

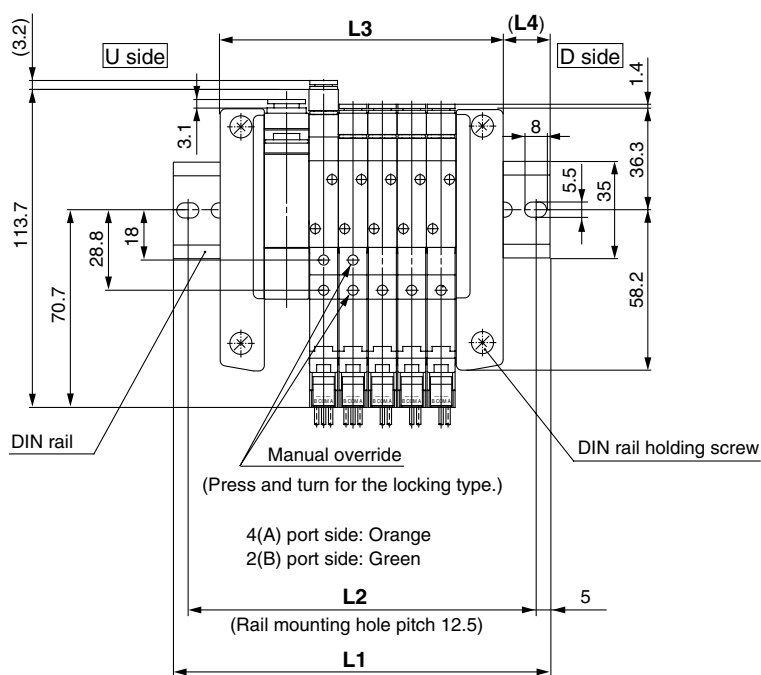
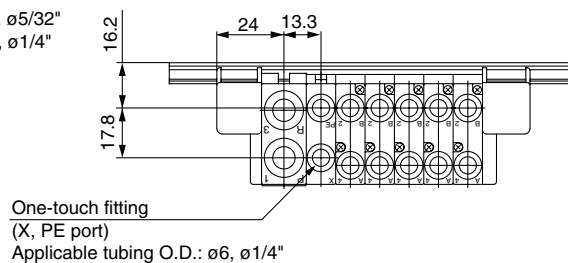
Clean gas filter

Dimensions: 10-SZ3000 Non Plug-in

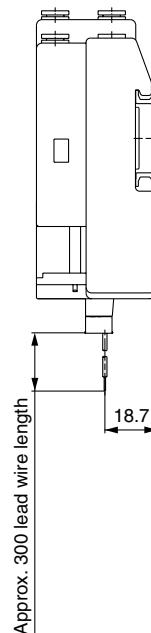
10-SS5Z3-60- Stations U



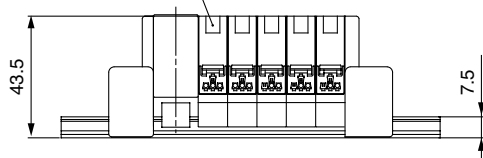
With external pilot



(Station n).....(Station 1)



Light/Surge voltage suppressor



Note) For manifold dimensions with elbow fitting, refer to page 340.

Internal Pilot Manifold L Dimension

n: Stations

L \ n	2	3	4	5	6	7	8	9	10
L1	98	110.5	123	135.5	135.5	148	160.5	173	185.5
L2	87.5	100	112.5	125	125	137.5	150	162.5	175
L3	70	80.5	91	101.5	112	122.5	133	143.5	154
L4	14	15	16	17	12	13	14	15	16

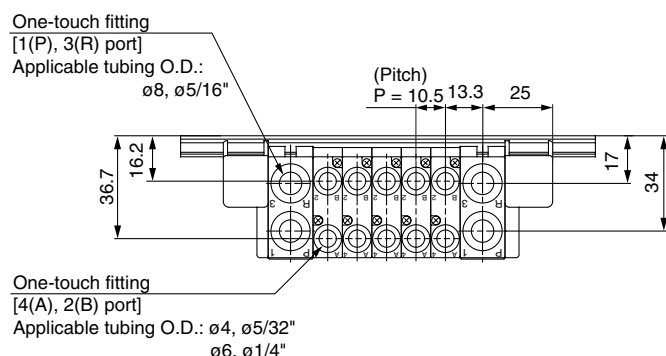
External Pilot Manifold L Dimension

n: Stations

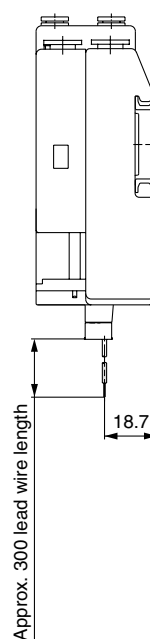
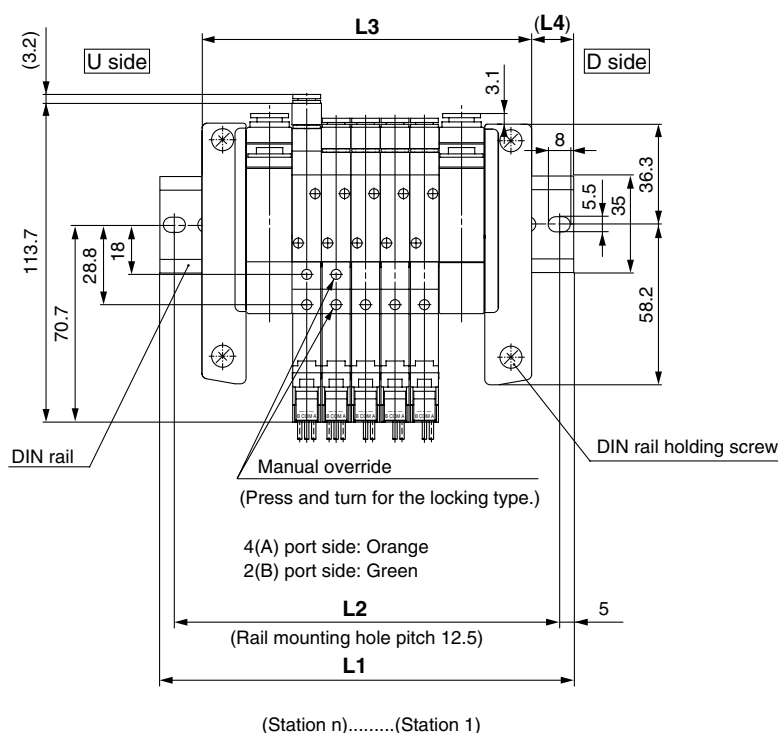
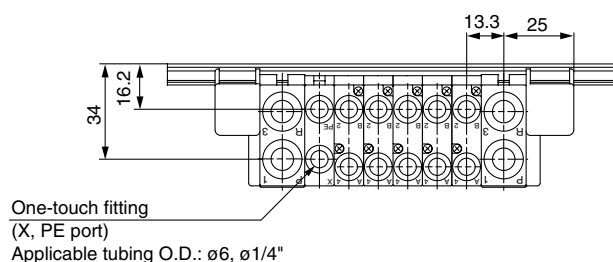
L \ n	2	3	4	5	6	7	8	9	10
L1	110.5	123	135.5	135.5	148	160.5	173	185.5	198
L2	100	112.5	125	125	137.5	150	162.5	175	187.5
L3	80.5	91	101.5	112	122.5	133	143.5	154	164.5
L4	15	16	17	12	13	14	15	16	17

Dimensions: 10-SZ3000 Non Plug-in

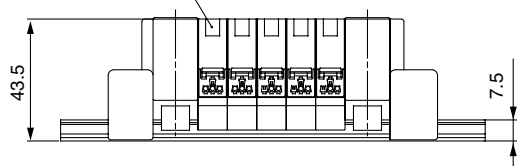
10-SS5Z3-60- Stations B



With external pilot



Light/surge voltage suppressor



Note) For manifold dimensions with elbow fitting, refer to page 340.

Internal Pilot Manifold L Dimension

		n: Stations																		
L	n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1		110.5	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298	310.5
L2		100	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5	300
L3		86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5	233	243.5	254	264.5	275
L4		12	13	14	15	16	17	12	13	14	15	16	17	12	13	14	15	16	17	18

External Pilot Manifold L Dimension

		n: Stations																		
L	n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1		123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298	310.5	310.5
L2		112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5	300	300
L3		96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5	233	243.5	254	264.5	275	285.5
L4		13.5	14.5	15.5	16.5	17.5	12	13	14	15	16	17	12	13	14	15	16	17	18	12.5

Series 10-SZ3000

Type 60S ☐ 5 Port Solenoid Valve
Serial Transmission Type



How to Order

10-SS5Z3-60S **Q** **D** - **05** **U** ☐ ☐ - ☐

• Clean series

Model

Q	DeviceNet, CompoBus/D (OMRON Corp.)
R1	OMRON Corp.: CompoBus / S System (16 output points)
R2	OMRON Corp.: CompoBus / S System (8 output points)
V	Mitsubishi Electric Corp.: CC-LINK System
F	NKE Corp.: Uni-wire 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)
0	Without SI unit

SI unit mounting position

D	D side
----------	--------

This should be indicated even without SI unit.

Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring specifications
:	:	
08	8 stations	Specified layout (Up to 16 solenoids possible)
02	2 stations	
:	:	
16	16 stations	



Note 1) Double wiring specifications: Single, double, 3 position and 4 position solenoid valves can be used at all of the manifold stations.

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.)

Note 3) R2 and J2 are available with up to 8 solenoids.

• Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required.

• SUP/EXH block fitting specifications

Nil	Straight
L	Elbow type (Upward)
B	Elbow type (Downward)

• Pilot type

Nil	Internal pilot
R	External pilot

• SUP/EXH block mounting position

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)
M *	Special specifications

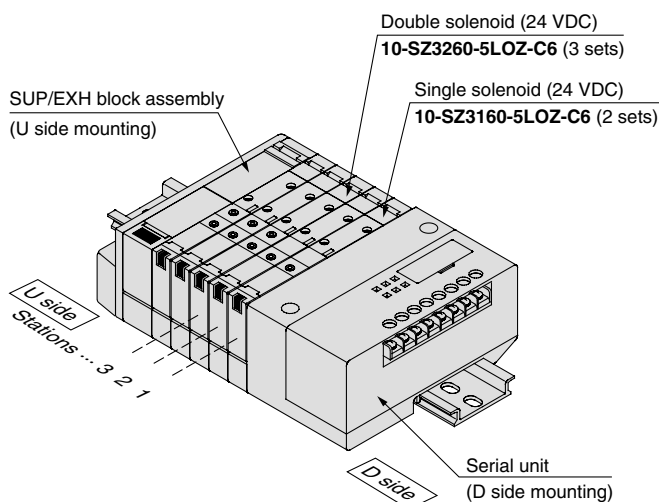


* For special specifications, indicate separately by the manifold specification sheet.

Note) A total of up to 3 SUP/EXH blocks can be mounted. Please contact SMC if 4 or more will be mounted.

How to Order Valve Manifold Assembly

Ordering example (OMRON Corporation compatible serial unit)



10-SS5Z3-60SR1D-05U.....1 set (Manifold part no.)
* 10-SZ3160-5LOZ-C6.....2 sets (Single solenoid part no.)
* 10-SZ3260-5LOZ-C6.....3 sets (Double solenoid part no.)

→The asterisk denotes the symbol for assembly. Prefix it to the part no. of solenoid valve, etc.

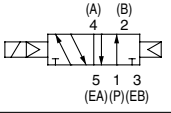
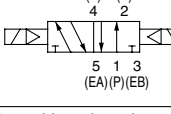
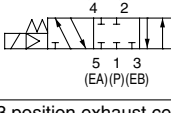
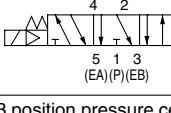
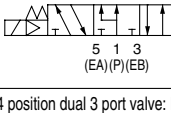
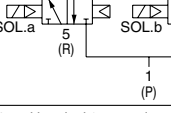
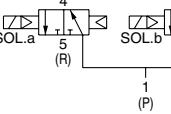
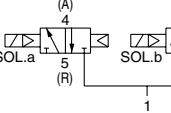
Stations are counted from D side as the 1st one.
Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing.
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

How to Order Solenoid Valves

10-SZ3 **1** **60** **- 5LOZ** **- C6**

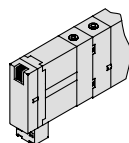
• Clean series

• Type of actuation

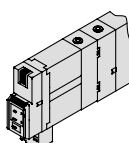
1	2 position single solenoid 
2	2 position double solenoid 
3	3 position closed center 
4	3 position exhaust center 
5	3 position pressure center 
A	4 position dual 3 port valve: N.C./N.C. 
B	4 position dual 3 port valve: N.O./N.O. 
C	4 position dual 3 port valve: N.C./N.O. 

• Switch specifications

Nil: Without switch



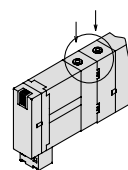
J: With switch



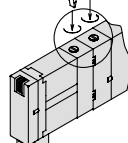
For switch operation, refer to page 354.

• Manual override

Nil: Non-locking push type

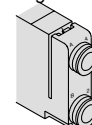


D: Push-turn locking slotted type
Manual override

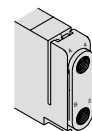


• A, B port size

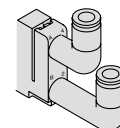
C4: One-touch fitting for $\phi 4$
C6: One-touch fitting for $\phi 6$
N3: One-touch fitting for $\phi 5/32$ "
N7: One-touch fitting for $\phi 1/4$ "



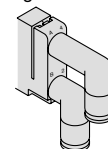
M5: M5 x 0.8



Elbow fitting assembly (Upward)
L4: $\phi 4$ elbow fitting assembly
L6: $\phi 6$ elbow fitting assembly



Elbow fitting assembly (Downward)
B4: $\phi 4$ elbow fitting assembly
B6: $\phi 6$ elbow fitting assembly



• Back pressure check valve

Nil	None
K	Built-in

- The built-in back pressure check valve type has an effective area approximately 20% smaller.
- The 3 position solenoid valves are not available with back pressure check valve.

• Pilot type

Nil	Internal pilot
R	External pilot

- Dual 3 port valves are not available with external pilot specifications.

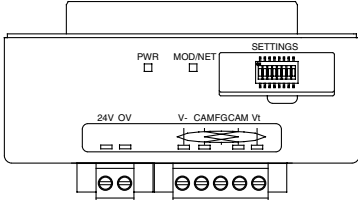
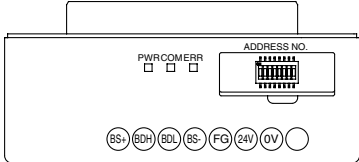
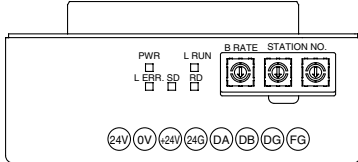
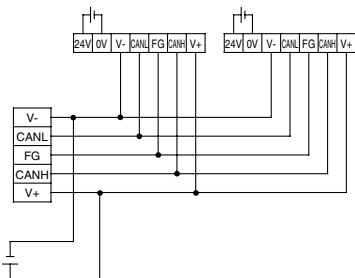
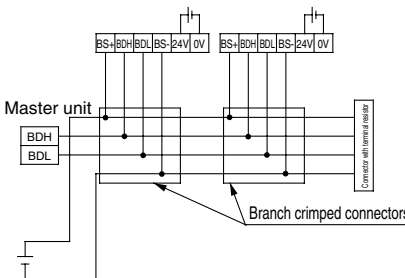
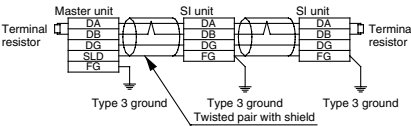
Specifications

Specifications

External power supply	24 VDC +10%/−5%	
Current consumption (Inside unit)	0.1A	F,H,J1,J2, Q,R1,R2,V

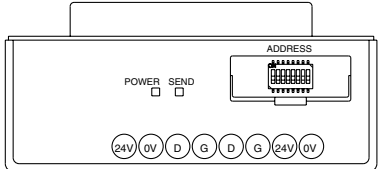
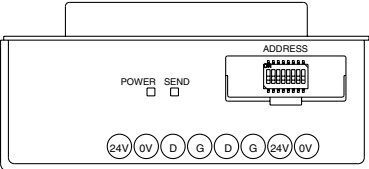
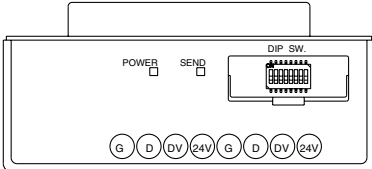
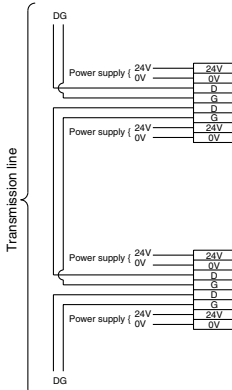
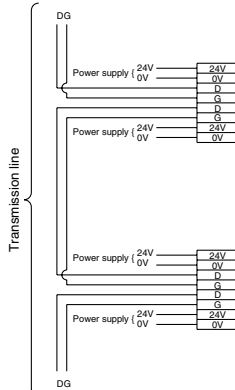
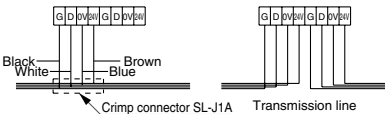
SI Unit Part No.

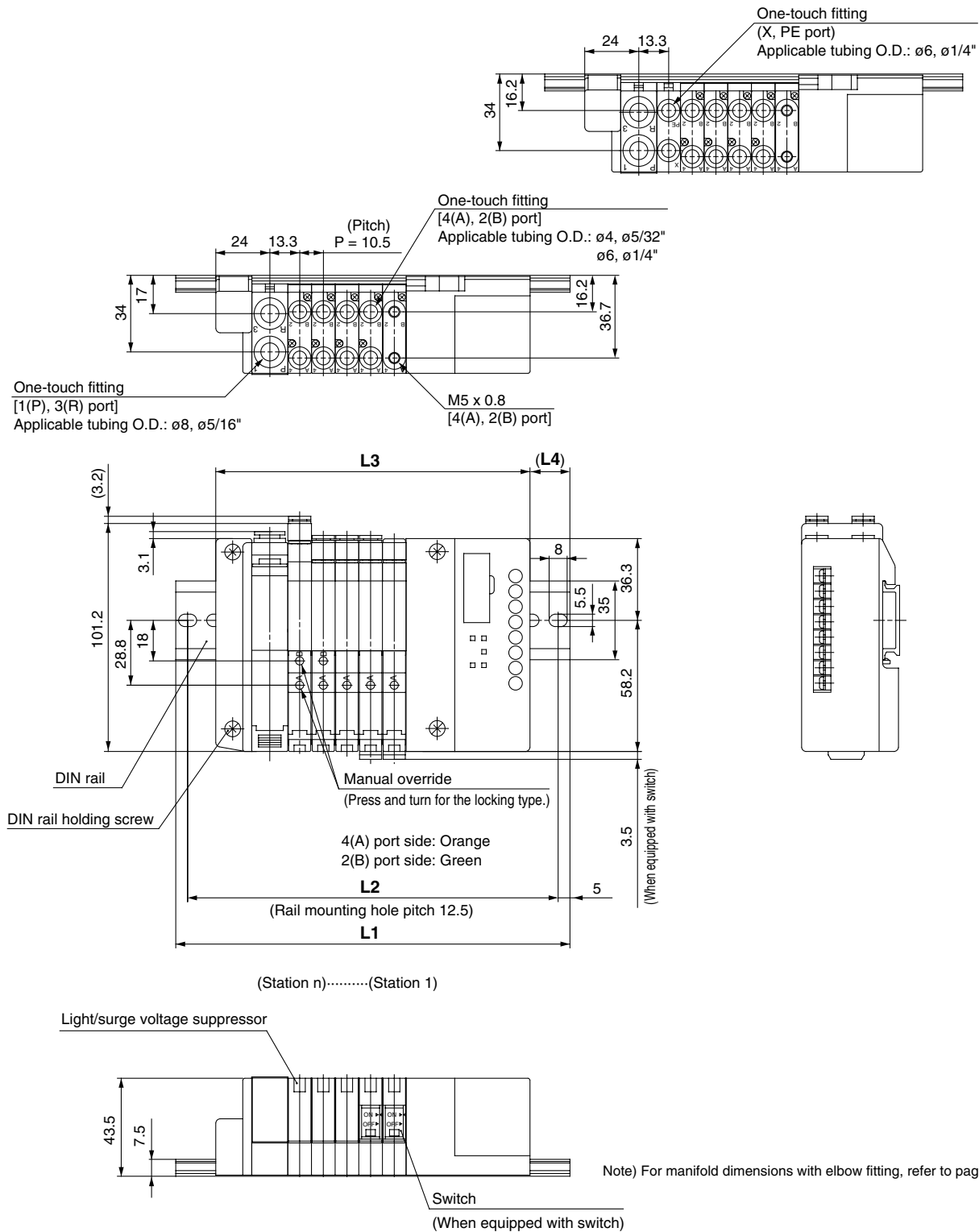
Symbol	Specifications	Part no.
Q	DeviceNet, CompoBus/D (OMRON Corporation)	EX140-SDN1
R1	OMRON Corporation: CompoBus/S System (16 output points)	EX140-SCS1
R2	OMRON Corporation: CompoBus/S System (8 output points)	EX140-SCS2
V	Mitsubishi Electric Corporation: CC-LINK System	EX140-SMJ1

	Type SQ DeviceNet	Type SR1/SR2 OMRON Corporation CompoBus/S System	Type SV Mitsubishi Electric Corporation CC-LINK System																												
Name of terminal block, LED	 <table><thead><tr><th>LED</th><th>Description</th></tr></thead><tbody><tr><td>POWER</td><td>Green light ON with circuit power input</td></tr><tr><td rowspan="4">MOD/ NET</td><td>Light OFF: When the unit is not online or circuit power is OFF</td></tr><tr><td>Green light ON continuously: When the unit is online and in operation</td></tr><tr><td>Red light blinks: When a reversible abnormal transmission occurs</td></tr><tr><td>Red light ON continuously: When irreversible abnormal transmission occurs or the same line is unable to go online</td></tr></tbody></table>	LED	Description	POWER	Green light ON with circuit power input	MOD/ NET	Light OFF: When the unit is not online or circuit power is OFF	Green light ON continuously: When the unit is online and in operation	Red light blinks: When a reversible abnormal transmission occurs	Red light ON continuously: When irreversible abnormal transmission occurs or the same line is unable to go online	 <table><thead><tr><th>LED</th><th>Description</th></tr></thead><tbody><tr><td>PWR.</td><td>Light ON with transmission power input, light OFF without it</td></tr><tr><td rowspan="2">COMM</td><td>Light ON with normal transmission, light OFF with abnormal or standby transmission</td></tr><tr><td>Light ON with abnormal transmission, light OFF with normal or standby transmission</td></tr></tbody></table>	LED	Description	PWR.	Light ON with transmission power input, light OFF without it	COMM	Light ON with normal transmission, light OFF with abnormal or standby transmission	Light ON with abnormal transmission, light OFF with normal or standby transmission	 <table><thead><tr><th>LED</th><th>Description</th></tr></thead><tbody><tr><td>PWR.</td><td>Light ON with transmission power input, light OFF without it</td></tr><tr><td>L RUN</td><td>Light ON when receiving normal data</td></tr><tr><td>SD</td><td>Light ON when sending data</td></tr><tr><td>RD</td><td>Light ON when receiving data</td></tr><tr><td>L ERR.</td><td>Light ON with transmission error / setting error, light blinks with changes in the station no. or transmission speed setting</td></tr></tbody></table>	LED	Description	PWR.	Light ON with transmission power input, light OFF without it	L RUN	Light ON when receiving normal data	SD	Light ON when sending data	RD	Light ON when receiving data	L ERR.	Light ON with transmission error / setting error, light blinks with changes in the station no. or transmission speed setting
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Note	• DeviceNet • OMRON Corporation CompoBus/D System Master unit: C200HW-DRM21 • No. of output points, 16 points	• CompoBus/S System Master unit: C200HW-SRM21 Master unit: CQM1-SRM21 • No. of output points, 16 points (Type SR1) • No. of output points, 8 points (Type SR2)	• CC-LINK System Master unit: AJ61BT11 Master unit: A1SJ61BT11 Master unit: AJ61QBT11 Master unit: A1SJ61QBT11 • No. of output points, 16 points																												
Cable wiring																															

SI Unit Part No.

Symbol	Specifications	Part no.
F	NKE Corporation: Uni-wire System	EX140-SUW1
H	NKE Corporation: Uni-wire H System	EX140-SUH1
J1	SUNX Corporation: S-LINK System (16 output points)	EX140-SSL1
J2	SUNX Corporation: S-LINK System (8 output points)	EX140-SSL2

	Type SF NKE Corporation Uni-wire System	Type SH NKE Corporation Uni-wire H System	Type SJ1/SJ2 SUNX Corporation S-LINK System																		
Name of terminal block and LED	 <table><tr><th>LED</th><th>Description</th></tr><tr><td>POWER</td><td>Lighting when power is turned ON (Light ON when normal, flickers when voltage is low)</td></tr><tr><td>SEND</td><td>Transmission indicator Normal: Blinks, Abnormal: Light OFF or ON</td></tr></table>	LED	Description	POWER	Lighting when power is turned ON (Light ON when normal, flickers when voltage is low)	SEND	Transmission indicator Normal: Blinks, Abnormal: Light OFF or ON	 <table><tr><th>LED</th><th>Description</th></tr><tr><td>POWER</td><td>Lighting when power is turned ON (Light ON when normal, flickers when voltage is low)</td></tr><tr><td>SEND</td><td>Transmission indicator Normal: Blinks, Abnormal: Light OFF or ON</td></tr></table>	LED	Description	POWER	Lighting when power is turned ON (Light ON when normal, flickers when voltage is low)	SEND	Transmission indicator Normal: Blinks, Abnormal: Light OFF or ON	 <table><tr><th>LED</th><th>Description</th></tr><tr><td>POWER</td><td>Lighting when power is turned ON</td></tr><tr><td>SEND</td><td>Transmission indicator Normal: Blinks, Abnormal: Blinks slowly</td></tr></table>	LED	Description	POWER	Lighting when power is turned ON	SEND	Transmission indicator Normal: Blinks, Abnormal: Blinks slowly
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Note	· Uni-wire System Send unit: SD-120 · No. of output points, 16 points	· Uni-wire H System Send unit: SD-H2 · No. of output points, 16 points	· S-LINK System S-LINK controller: SL-CU1 · No. of output points, 16 points (Type SJ1) No. of output points, 8 points (Type SJ2)																		
Cable wiring			a) Type T branching multi-drop wiring (S-LINK System) b) Crossover wiring (Sensor link system)  Main transmission line The above is the example of using dedicated S-LINK flat ribbon cable SL-RCM□00.																		

Dimensions: 10-SZ3000 Serial Transmission Type**10-SS5Z3-60S □ D- Stations U****With external pilot****Internal Pilot Manifold L Dimension**

n: Stations (n1 + n2)

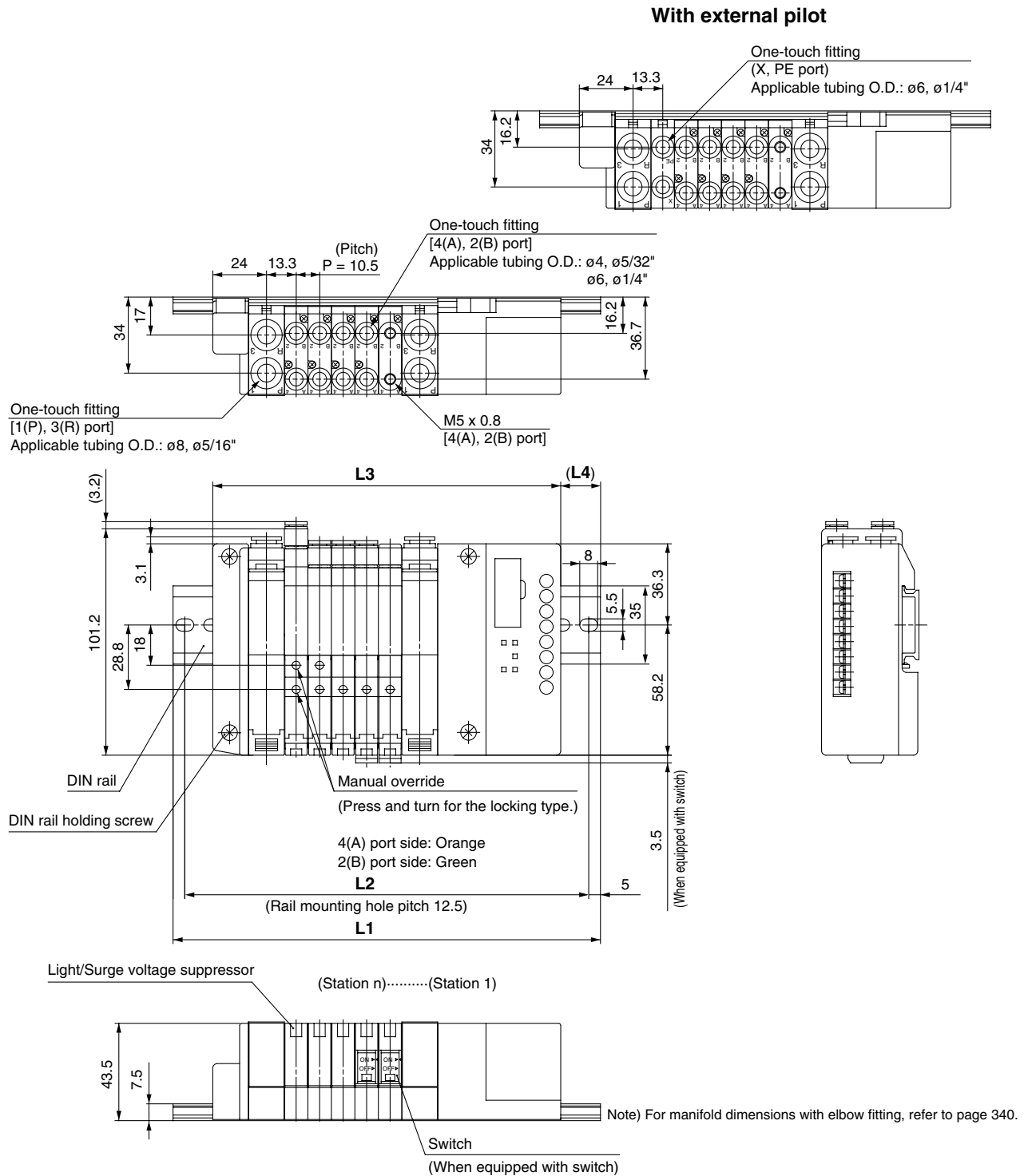
L \ n	2	3	4	5	6	7	8	9	10
L1	135.5	148	160.5	173	185.5	185.5	198	210.5	223
L2	125	137.5	150	162.5	175	175	187.5	200	212.5
L3	108	118.5	129	139.5	150	160.5	171	181.5	192
L4	14	15	16	17	18	12.5	13.5	14.5	15.5

External Pilot Manifold L Dimension

n: Stations (n1 + n2)

L \ n	2	3	4	5	6	7	8	9	10
L1	148	160.5	173	185.5	185.5	198	210.5	223	235.5
L2	137.5	150	162.5	175	175	187.5	200	212.5	225
L3	118.5	129	139.5	150	160.5	171	181.5	192	202.5
L4	15	16	17	18	12.5	13.5	14.5	15.5	16.5

Dimensions: 10-SZ3000 Serial Transmission Type

10-SS5Z3-60S □ **D-** Stations **B**

Internal Pilot Manifold L Dimension

n: Stations (n1 + n2)

L \ n	2	3	4	5	6	7	8	9
L1	148	160.5	173	185.5	198	210.5	210.5	223
L2	137.5	150	162.5	175	187.5	200	200	212.5
L3	124	134.5	145	155.5	166	176.5	187	197.5
L4	12	13	14	15	16	17	12	13

L \ n	10	11	12	13	14	15	16
L1	235.5	248	260.5	273	285.5	285.5	298
L2	225	237.5	250	262.5	275	275	287.5
L3	208	218.5	229	239.5	250	260.5	271
L4	14	15	16	17	18	12.5	13.5

External Pilot Manifold L Dimension

n: Stations (n1 + n2)

L \ n	2	3	4	5	6	7	8	9
L1	160.5	173	185.5	198	210.5	210.5	223	235.5
L2	150	162.5	175	187.5	200	200	212.5	225
L3	134.5	145	155.5	166	176.5	187	197.5	208
L4	13	14	15	16	17	12	13	14

L \ n	10	11	12	13	14	15	16
L1	248	260.5	273	285.5	285.5	298	310.5
L2	237.5	250	262.5	275	275	287.5	300
L3	218.5	229	239.5	250	260.5	271	281.5
L4	15	16	17	18	12.5	13.5	14.5

Series 10-SZ3000

Made to Order Specifications

Please contact SMC for detailed specifications, delivery and pricing.

1 Main Valve Fluoro Rubber Specifications -X90

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

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

Model no.

10-SZ3 60(R)-X90

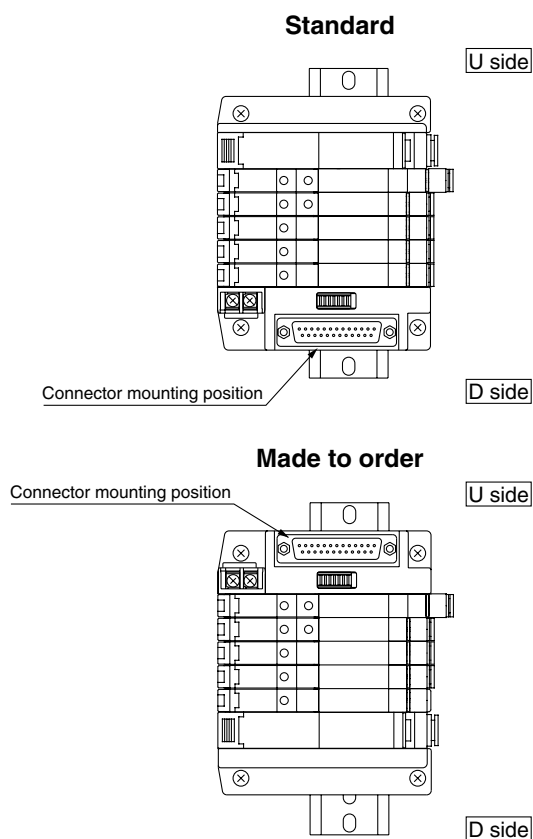
• Entry is the same as standard products.

Specifications and performance are the same as standard products.

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

2 Plug-in Manifold Connector and Serial Unit Mounted on U Side

Products are also available with the plug-in manifold connector mounting position and the serial unit mounting position on the reverse side (U side). For details about part numbers and wiring specifications, etc., please contact SMC.



Air cylinder

Rotary actuator

Air gripper

Directional control valve

Flow control equipment

Filter, Pressure control equipment

Fittings & Tubing

Air preparation equipment

Pressure switch

Clean gas filter



Specific Product Precautions 1

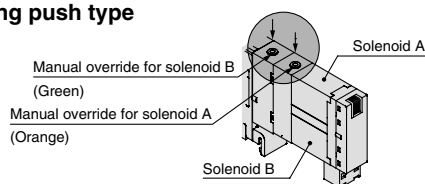
Be sure to read before handling.

Warning

Manual Override Operation

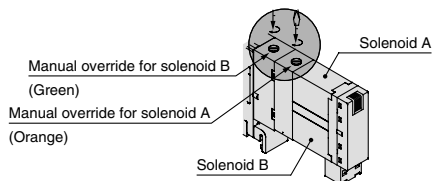
Handle carefully, as connected equipment can be actuated through manual override operation.

Non-locking push type



Push-turn locking slotted type

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



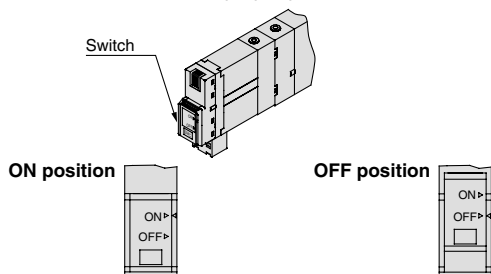
Caution

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

Warning

Valves with Switches

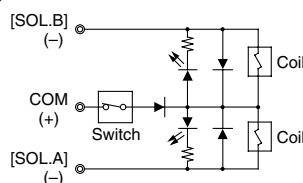
When turning OFF with the switch, be sure to move the switch to the locked position. Connected equipment may be actuated if current flow occurs with the switch at an improper position.



Normal operating condition. Switching of valve is based on an electric signal from the connector.

The valve coil is kept in a de-energized state even when there is an electric signal from the connector.

Electric circuit diagram (With positive common and light/surge voltage suppressor)



Caution

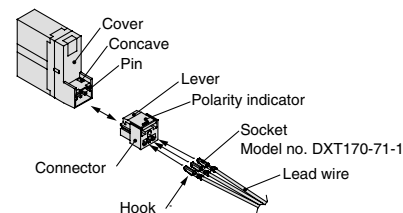
How to Use Plug Connector

When attaching and detaching a connector, first shut off the electric power and the air supply.

Also, crimp the lead wires and sockets securely.

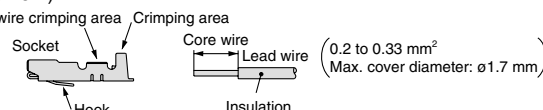
1. Attaching and detaching connectors

- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.



2. Crimping of lead wires and sockets

Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires neatly into a socket and crimp it with a special crimp tool. Be careful so that the cover of lead wire does not enter into the crimping part. (Crimping tool: Model no. DXT170-75-1)



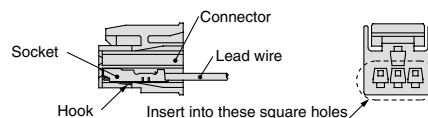
3. Attaching and detaching lead wires with sockets

Attaching

Insert the sockets into the square holes of the connector (with ⊕ and ⊖ indication), and continue to push the sockets all the way in until the lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Then confirm that they are locked by pulling lightly on the lead wires.

Detaching

To detach a socket from a connector, pull out the lead wire while pressing the socket's hook with a stick having a thin tip (approx. 1 mm). If the socket is used again, spread the hook outward.



Plug connector lead wire length

Plug connector lead wires have a standard length of 300 mm, however, the following lengths are also available.

M Type Connector Assembly Part No.

Positive common specifications

For single solenoid: **SX100-40-4S-**
For double solenoid
For 3 position type: **SX100-40-4D-**
For 4 position type

Negative common specifications

For single solenoid: **SX100-41-4S-**
For double solenoid
For 3 position type: **SX100-41-4D-**
For 4 position type

Lead wire length

Nil	300mm
6	600mm
10	1000mm
15	1500mm
20	2000mm
25	2500mm
30	3000mm
50	5000mm

How to Order

Include the connector assembly part number together with the part number for the plug connector's solenoid valve without connector.

<Example> Lead wire length 2000 mm

10-SZ3160-SMO-M5
SX100-40-4S-20



Specific Product Precautions 2

Be sure to read before handling.

⚠ Caution

Common Connector Assembly for Manifold

By using a common connector assembly for the solenoid valves on a manifold, the common wiring for each solenoid valve is reduced to one line, making it possible to achieve labor savings on wiring work.

Common connector assembly part numbers

Positive common specifications

For single solenoid

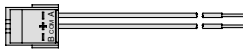
SX100-42-4S



For double solenoid,
3 position type, 4 position type
SX100-42-4D



With common lead wire for
single solenoid
SX100-40-4S



With common lead wire for
double solenoid, 3 position type,
4 position type
SX100-40-4D



(Lead wire length 300 mm)

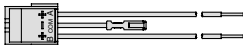
Negative common specifications

For single solenoid

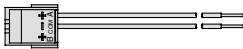
SX100-43-4S



For double solenoid,
3 position type, 4 position type
SX100-43-4D



With common lead wire for
single solenoid
SX100-41-4S



With common lead wire for
double solenoid, 3 position type,
4 position type
SX100-41-4D



(Lead wire length 300 mm)

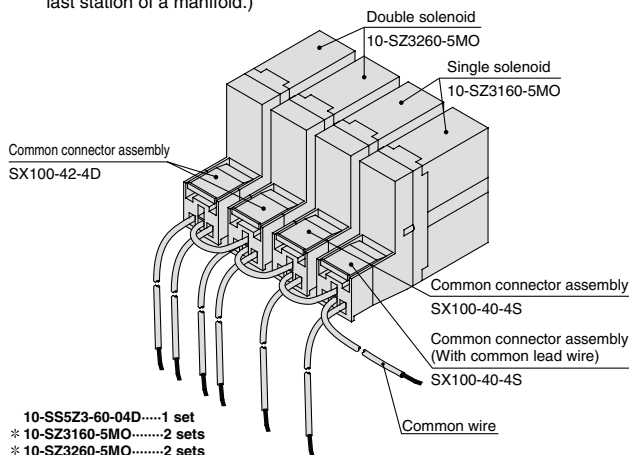
How to Order

Include the common connector assembly part number together with the manifold and solenoid valve part numbers. If the arrangement becomes complicated, then indicate on the manifold specification sheet.

Note 1) Take note that applications with unused connectors or with blanking plates between stations are not possible.

Note 2) For the solenoid valve, specify "without connector" for the plug connector type. The grommet type cannot be used.

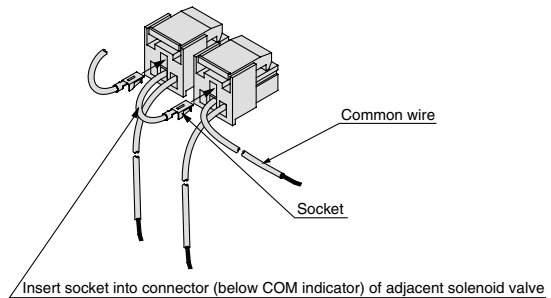
Note 3) In places where signals will be sent to the common wiring, use a connector assembly with a common lead wire. (This is limited to the first station or the last station of a manifold.)



10-SS5Z3-60-04D.....1 set
* 10-SZ3160-5MO.....2 sets
* 10-SZ3260-5MO.....2 sets
* SX100-40-4S.....1 set (with common lead wire for single solenoid)
* SX100-42-4S.....1 set (For single solenoid)
* SX100-42-4D.....2 sets (For double solenoid, for 3 position, for 4 position)
The asterisk denotes the symbol for assembly. Prefix it to the part no. of solenoid valve, etc.

Common connector assembly wiring

When ordering common connector assemblies alone, wiring should be performed as outlined in the drawing below. For details on attachment of sockets, refer to the section "How to Use Plug Connectors" on page 354.



⚠ Caution

One-touch Fittings

The pitch of each piping port (P, A, B, etc.) for Series 10-SZ is based on the assumption that Series KJ One-touch fittings will be used. For this reason, when other fittings are used, they may interfere with one another depending on their types and sizes. Therefore, the dimensions of the fittings to be used should first be confirmed in their respective catalogs.

⚠ Caution

Exhaust Restriction

Since Series 10-SZ is a type in which the pilot valve exhaust joins the main valve exhaust inside the valve, care must be taken that the piping from the exhaust port is not restricted.

⚠ Caution

Series 10-SZ3000 Used as a 3 Port Valve

Using a 5 port valve as a 3 port valve

Series 10-SZ3000 valves can be used as normally closed (N.C.) or normally open (N.O.) 3 port valves by closing one of the cylinder ports (A or B) with a plug. However, they should be used with the exhaust ports kept open. They are convenient at times when a double solenoid type 3 port valve is required.

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



Specific Product Precautions 3

Be sure to read before handling.

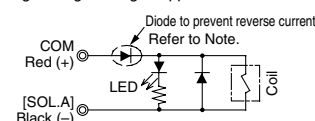
⚠ Caution

Light/Surge voltage suppressor

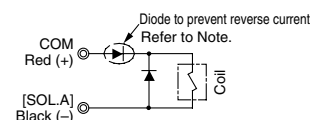
Positive common specifications

Single solenoid type

Light/Surge voltage suppressor



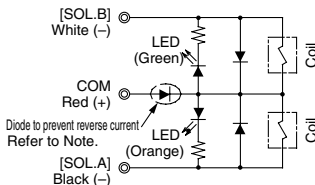
Surge voltage suppressor



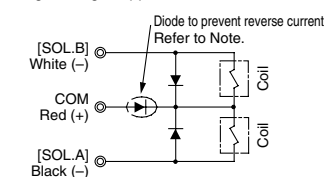
Positive common specifications

Double solenoid, 3 position type, 4 position type

Light/surge voltage suppressor



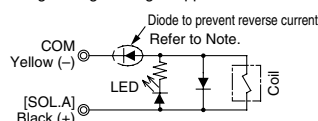
Surge voltage suppressor



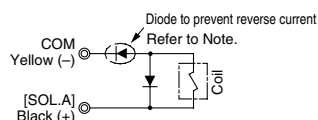
Negative common specifications

Single solenoid type

Light/Surge voltage suppressor



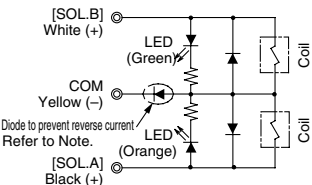
Surge voltage suppressor



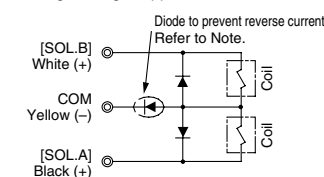
Negative common specifications

Double solenoid, 3 position type, 4 position type

Light/surge voltage suppressor



Surge voltage suppressor



Note) Connect so that polarity is matched to the connector's (+), (-) and A, B and COM indicators. In case of voltage specifications other than 12 or 24 VDC, take care to avoid mistaking polarity, as there is no diode to prevent reverse current. In the event that lead wires are connected in advance, they will be as shown below.

Positive common specifications

- A (-): **Black**
- COM (+): **Red**
- B (-): **White** (No lead wire in case of single solenoid)

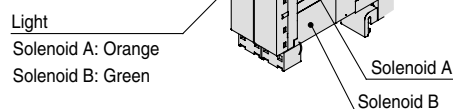
Negative common specifications

- A (+): **Black**
- COM (-): **Yellow**
- B (+): **White** (No lead wire in case of single solenoid)

⚠ Caution

Light Indication

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



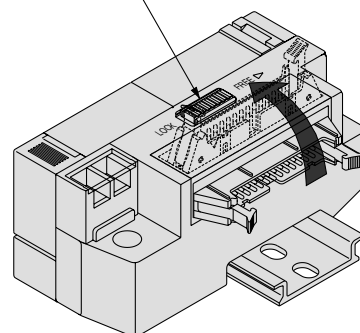
⚠ Caution

Changing the Connector Entry Direction

To change the connector's entry direction, set the switch on the top of the connector block to the FREE position, and turn the connector. Make sure to set the switch back to the LOCK position before connecting the connector. (When the switch is difficult to slide, move the connector a little so that it will slide easier.)

If an excessive force is applied on the connector in the LOCK position, the connector block may be damaged. Also, using in such a way that the connector floats in the FREE position, it may cause the lead wire, etc. to break. Thus, refrain from using in these ways.

Switch for locking a connector





Specific Product Precautions 4

Be sure to read before handling.

Caution

One-touch Fittings

1. Tube attachment/detachment for One-touch fittings

1) Attaching of tube

- (1) Take a tube having no flaws on its periphery and cut it off at a right angle. When cutting the tube, use tube cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tube cutter, the tube may be cut diagonally or become flattened, etc. This can make a secure installation impossible, and cause problems such as the tube pulling out after installation or air leakage. Also allow some extra length in the tube.
- (2) Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.
- (3) After inserting the tube, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tube pulling out.

2) Detaching of tube

- (1) Push in the release button sufficiently, pushing the collar evenly.
- (2) Pull out the tube while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tube and it will become more difficult to pull it out.
- (3) When the removed tube is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tube is used as is, this can cause trouble such as air leakage or difficulty in removing the tube.

Caution

Other Tube Brands

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

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

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

Caution

Built-in Back Pressure Check Valve

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

Air cylinder

Rotary actuator

Air gripper

Directional control valve

Flow control equipment

Filter, Pressure control equipment

Fittings & Tubing

Air preparation equipment

Pressure switch

Clean gas filter