

Fieldbus System (Input/Output)



Applicable Fieldbus protocols



Max. **9 units** (Note)

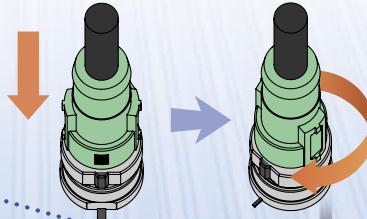
Can be connected in any order.

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

Note) Except SI unit

Reduction of wiring time by use of a **SPEEDCON** (Phoenix Contact).
Just insert and make 1/2 rotation!

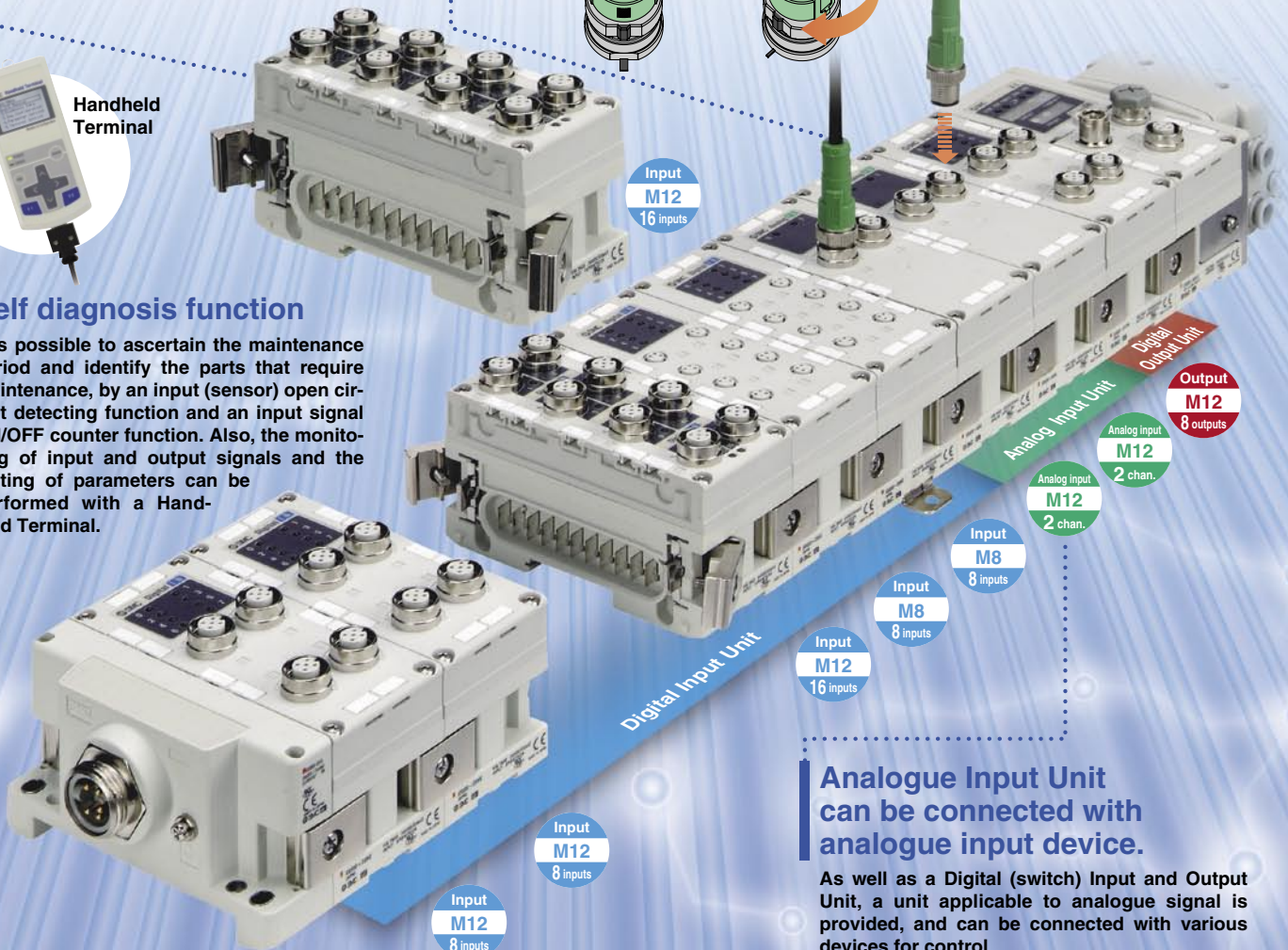
IP67



Handheld Terminal

Self diagnosis function

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



Analogue Input Unit can be connected with analogue input device.

As well as a Digital (switch) Input and Output Unit, a unit applicable to analogue signal is provided, and can be connected with various devices for control.

Manifold Solenoid Valve

Series **SV1000/2000/3000**



IP67

Series **S0700**



IP40

Series **VQC1000/2000/4000**



IP67

Series **EX600**



CAT.EUS02-24A-UK

Fieldbus System

Easily connected to various input and output device.

Various input and output device can be connected through the Input Unit and Output Unit. Connection is possible by M8 or M12 connector.

Analogue input device

Pressure sensor

Series PSE5□□
etc.

Flow sensor

Series PFM5□□
Series PFMV5□□
etc.

* The Analogue Input Unit is a 4-wire type, and care should be taken for wiring. Refer to page 35.



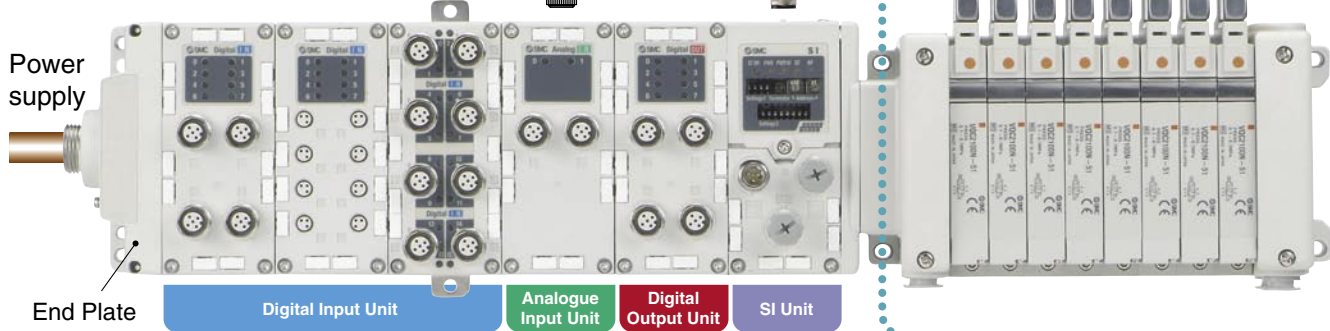
Handheld Terminal

Parameter setting and I/O monitor tool

▶ P. 39



The order of connecting units below, from End Plate to Digital Input Unit, Analogue Input Unit, Digital Output Unit, SI Unit, and Manifold solenoid valve, is an example only for this catalogue.



Input device

Pressure switch

Series Z/ISE30A
Series ISE70/75□
Series Z/ISE80
etc.

Flow switch

Series PFM
Series PF2□
etc.

Auto switch

Series D-M9□
Series D-A93
etc.

Others

Proximate sensor
Photoelectric switch
Limit switch
etc.



Output device

Device such as a solenoid valve, light, and buzzer can be connected with the Digital Output Unit.

Solenoid valve

Series SY/SYJ
Series VCH
Series VDW
Series VXE
etc.

Others

Indicator light
Relay
Buzzer
etc.



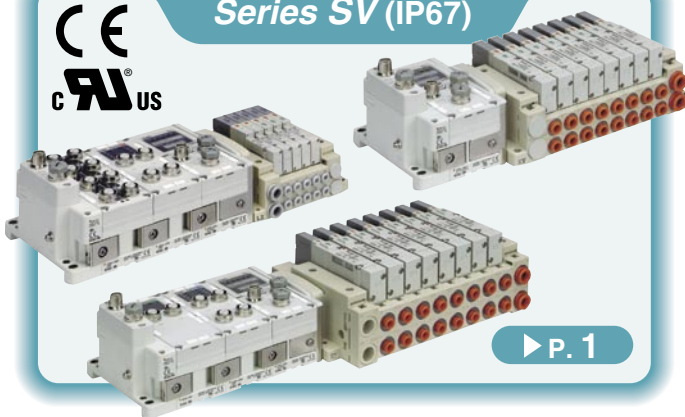
For detailed specifications of connectable device, refer to the catalogue of each device and select the right device for your application. If anything is unclear, contact us.

Parameters

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



Series SV (IP67)



▶ P. 1



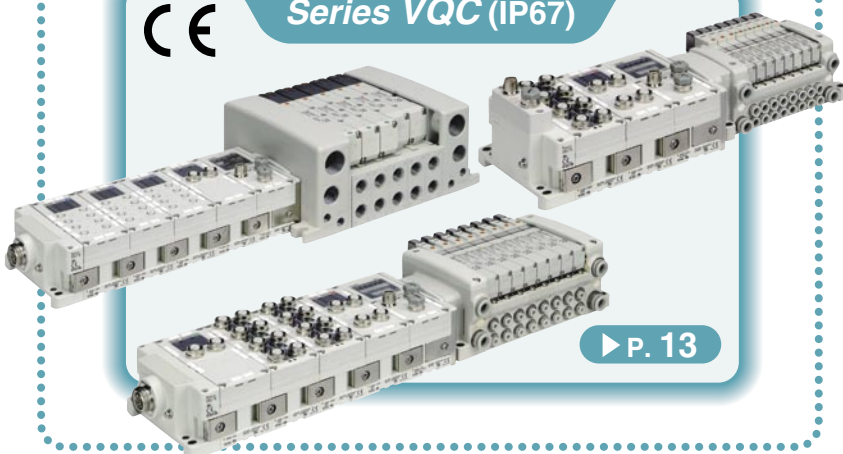
Series S0700 (IP40)



▶ P. 9



Series VQC (IP67)



▶ P. 13

SI Unit

Unit to connect various Fieldbus with the EX600 system

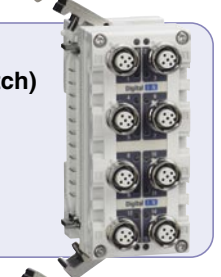
▶ P. 25



Digital Input Unit

Unit to accept digital (switch) signals

▶ P. 27



Digital Output Unit

Unit to output digital (on/off) signals

▶ P. 31



Analogue Input Unit

Unit to accept analogue (voltage/current) signals

▶ P. 33



End Plate

Unit to supply power to the EX600 system

▶ P. 37



Accessories

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

▶ P. 41



Fieldbus System

Freely combined by a unit connecting method

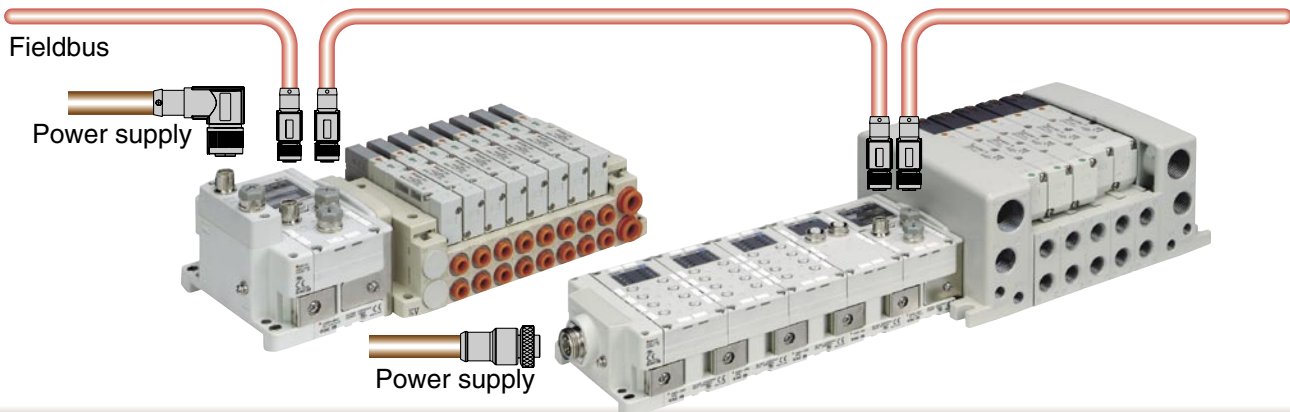
It is possible to select a configuration, such as for actuating solenoid valves only and for connection with input and output device in addition to solenoid valves.

The Analogue Input Unit can also be connected to read the deviation of pressure and flow rate.

The End Plate is selectable from two types, one for a SPEED-CON (M12 connector) of 2A power supply capacity and the other for 7/8 inch connector of 8A power supply capacity.

IP67 (with screws tightened)

Excluding the Handheld Terminal and S0700 series solenoid valve.

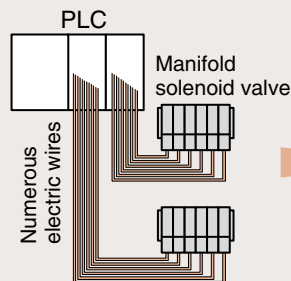


Fieldbus System

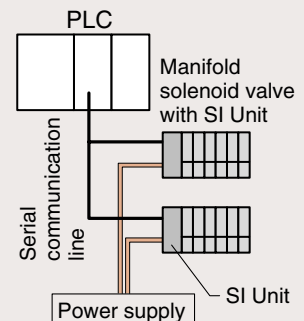
A **Fieldbus System** is a one-to-many control system. It can control multiple output device by the connection of a single communication line with a PLC communication unit (master) and take signals from various input device.

In a parallel wiring system, it is necessary to connect wires with the PLC input and output unit one by one, so it requires as many wires as the number of solenoid valves and input and output device used.

[Existing system]



[Serial transmission system]



Self Diagnosis Function

In combination with the hand held terminal, the following two functions are available.

Short/Open circuit detecting function

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



Green ON Normal

Red ON Short circuit

Red flashing Open circuit

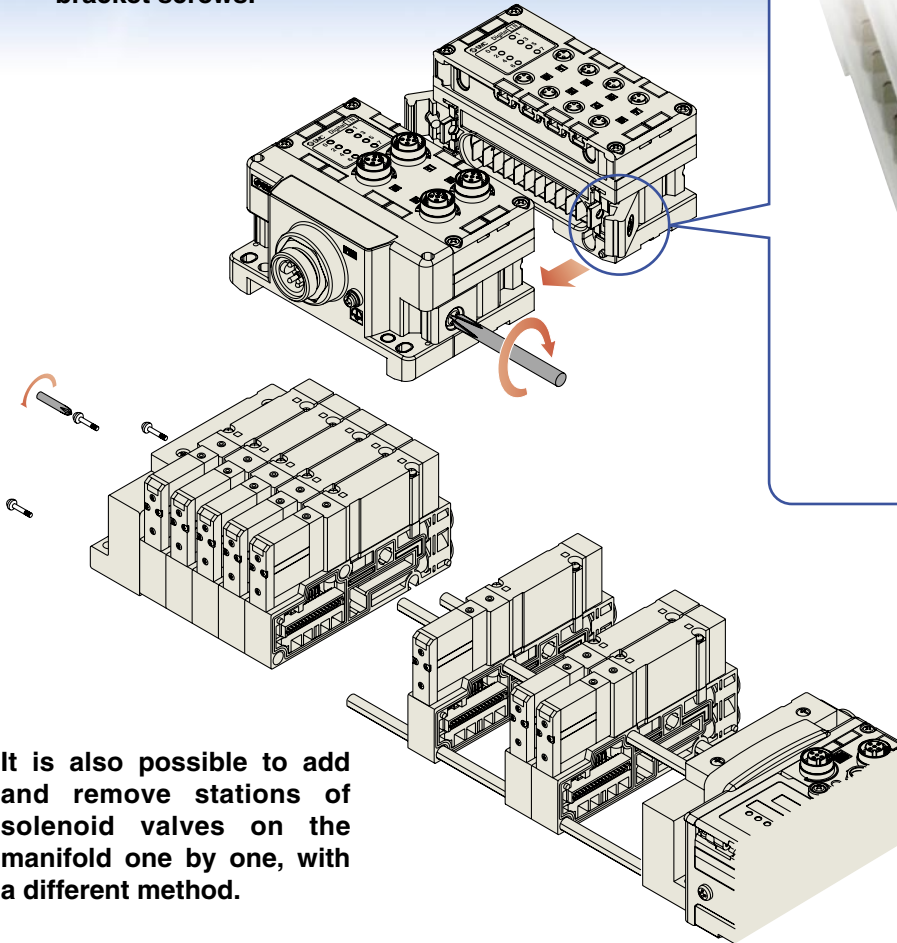
Counter function

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

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

Individual units can be connected and removed one by one.

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



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

Handheld Terminal

Forced input and output function

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

Password setting function

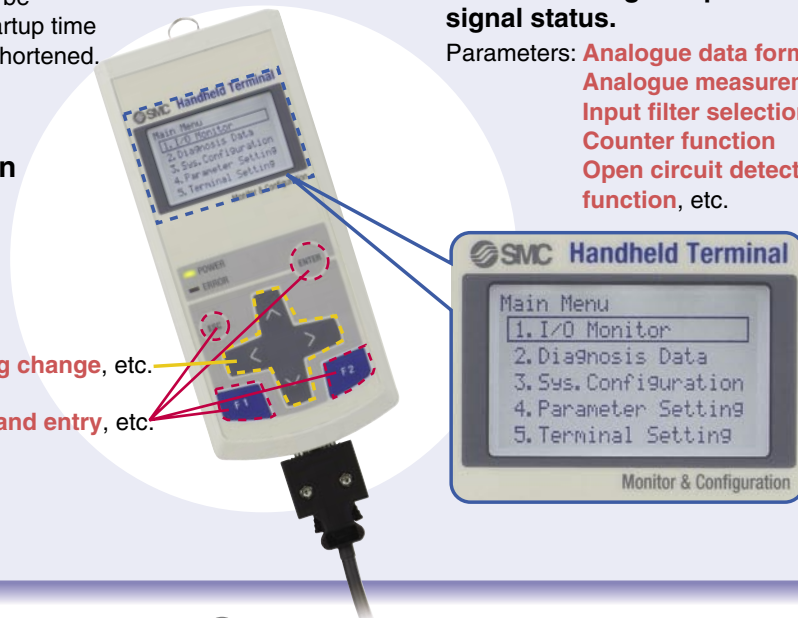
Simple operation

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

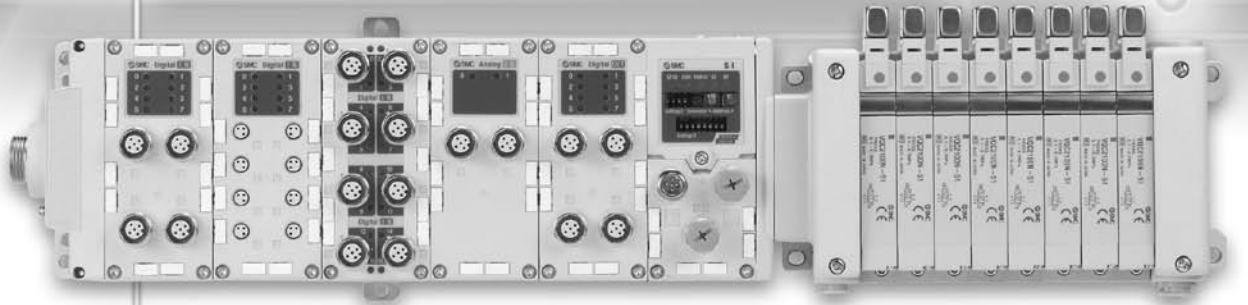
Function key: **Value and command entry**, etc.

Adjustment of internal parameters and monitoring of input and output signal status.

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



Fieldbus System (Input/Output)



Applicable Manifold Solenoid Valve for the EX600 Series

<i>Series SV1000/2000/3000</i>	P. 1
<i>Series S0700</i>	P. 9
<i>Series VQC1000</i>	P. 13
<i>Series VQC2000</i>	P. 17
<i>Series VQC4000</i>	P. 21

Fieldbus System

SI Unit	P. 25
Digital Input Unit	P. 27
Digital Output Unit	P. 31
Analogue Input Unit	P. 33
End Plate	P. 37
Handheld Terminal	P. 39
Accessories	P. 41
Communication Cable/Connector	P. 43
Sensor/Switch-Input Device Fieldwireable Connector	P. 47
Sensor/Switch-Input Device Cable with Connector	P. 48
Sensor/Switch-Input Device Y Connector	P. 49
Safety Instructions	Back page 1
Specific Product Precautions	Back page 2

Series EX600



Series SV1000/2000/3000

How to Order

● Tie-rod Base

SS5V **1** - **W10S6** **Q** **□** **□** **□** **D** - **05** **U** **□** - **C6** - **□**

Series

1	SV1000
2	SV2000
3	SV3000

Protection class IP67

SI Unit

0	Without SI Unit
Q	DeviceNet™ type
N	PROFIBUS DP type
V	CC-Link type

Note 1) I/O units cannot be chosen without SI Unit.
 Note 2) Without SI Unit type does not include the Valve Plate for connecting the valve manifold and SI Unit. Refer to back page 4 for mounting method.

End Plate type

—	No end plate
2	M12 connector power supply (Max. supply current 2A)
3	7/8 inch connector power supply (Max. supply current 8A)

Note) Without SI Unit, leave this option blank ("no end plate" option).

SI Unit COM.

—	+COM.
N	-COM.

Note) Without SI Unit, leave this option blank ("COM" option).

I/O unit sta. number

—	None
1	1 sta.
⋮	⋮
9	9 sta.

Note 1) Without SI Unit, no symbol is considered ("none" option).
 Note 2) SI Unit is not included in I/O unit station number.
 Note 3) When I/O unit is selected, it is shipped separately (assembled by customer). Refer to attached instruction manual for mounting method.

Valve stations

Symbol	Stations	Note
02	2 sta.	Double wiring specification ^{Note 1)}
⋮	⋮	
16	16 sta.	
02	2 sta.	Specified layout ^{Note 2)} (Up to 32 solenoids possible)
⋮	⋮	
20	20 sta.	

Note 1) Double wiring specifications: Single, double, 3 position and 4 position solenoid valves can be used at all of the manifold stations. When single solenoid is used, control signal which is not assigned to any number is made. If empty signal is not wanted, please order with signal layout specified.
 Note 2) Specified layout: Indicate wiring specifications with the manifold specification sheet. (Note that double, 3 position and 4 position valves cannot be used where single solenoid wiring has been specified.)

Mounting

—	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0 ^{Note 1)}	DIN rail mounting (Without DIN rail)	
D3	For 3	When a longer DIN rail than the standard length is desired.
⋮	⋮	
D20	For 20	

Note 1) In the case of D0, only DIN rail mounting bracket is attached.
 Note 2) DIN rail is not attached (but shipped together) on the manifold in the case of with DIN rail. Refer to SV series catalogue for mounting method.
 Note 3) When DIN rail mounting is selected for SV3000, and I/O unit station number is 9, the maximum number of valve stations is 18, due to DIN rail total length limitations. (Refer to pages 7 and 8.)
 Note 4) Please consult SMC when changing from direct mounting to DIN rail mounting.

● SUP/EXH block assembly

—	Internal pilot
S ^{Note)}	Internal pilot, Built-in silencer
R	External pilot
RS ^{Note)}	External pilot, Built-in silencer

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

● P, E port entry

U	U side (2 sta. to 10 sta.)
D	D side (2 sta. to 10 sta.)
B	B side (2 sta. to 20 sta.)

A, B port size (Metric)

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

A, B port size (Inch)

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

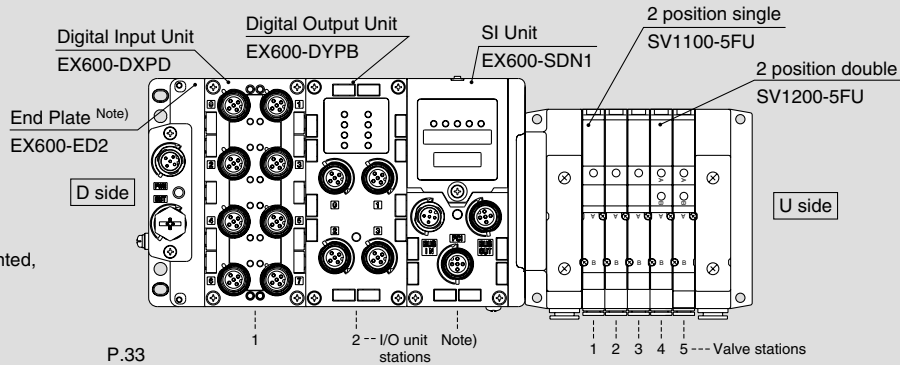
Note 1) In case of Mixed specifications (M), indicate separately with the manifold specification sheet.

Note 2) Regarding the X and PE port size of External pilot type (R), and X port size of External pilot/Built-in silencer type (RS), ø4 (mm) and ø5/32" (inch) for the SV1000/2000 series, ø6 (mm) and ø1/4" (inch) for the SV3000 series.

How to Order Manifold Assembly (Example)

Example (SS5V1)

Manifold
Power supply with
M12 connector



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

- Digital Input Unit P.27
- Digital Output Unit P.31
- Analogue Input Unit.....

P.33

Serial transmission kit

- SS5V1-W10S6Q2N2D-05B-C6 1 set
- * SV1100-5FU 3 sets
- * SV1200-5FU 2 sets
- * EX600-DXPD 1 set
- * EX600-DYPB 1 set

- Manifold base part number
- Valve part number (Stations 1 to 3)
- Valve part number (Stations 4 to 5)
- I/O unit part number (Station 1)
- I/O unit part number (Station 2)

Enter in order starting from the first station on the D side.
When entry of part numbers becomes complicated, indicate with the manifold specification sheet.

Enter in order starting from the first station on the D side.
When entry of part numbers becomes complicated, indicate with the manifold specification sheet.

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

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

How to Order Valves

SV 1 1 00 - 5 FU -

Series

1	SV1000
2	SV2000
3	SV3000

Type of actuation

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

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

Pilot specifications

—	Internal pilot
R	External pilot

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

Back pressure check valve

—	None
K	Built-in

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

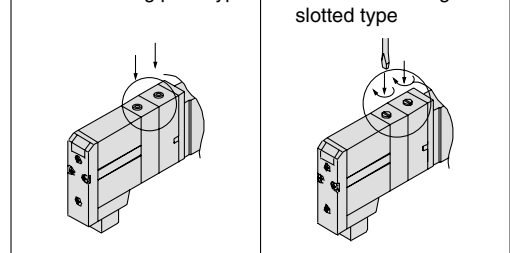
* The 3 position valve is not available with the back pressure check valve.

Made to Order

—	—
X90	Fluorine rubber specification

Manual override

—: Non-locking push type D: Push-turn locking slotted type



Light/surge voltage suppressor

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

Coil voltage

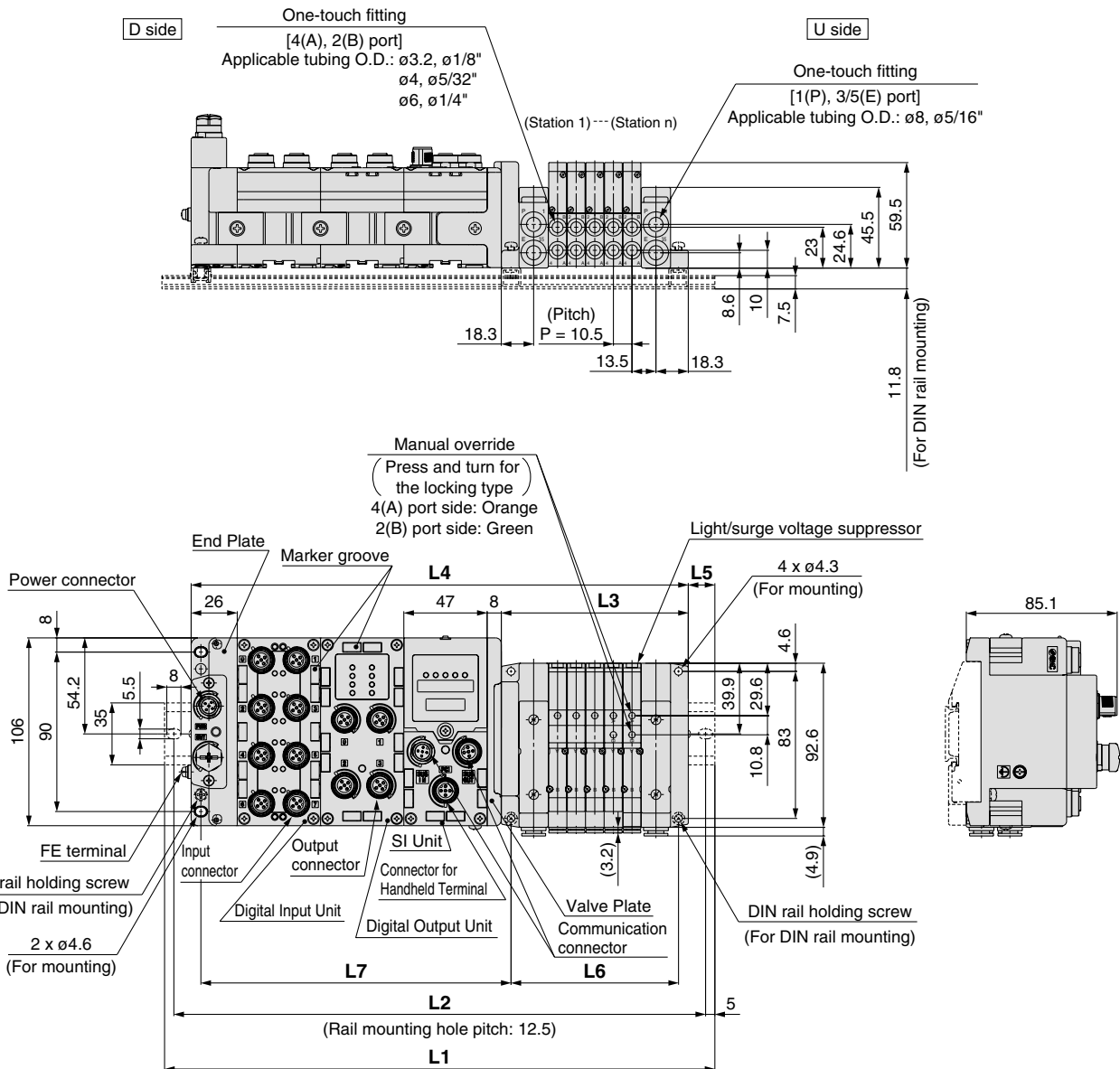
5	24 VDC
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Refer to the catalogue of each series for details on manifold solenoid valve specifications, Common Precautions and Specific Product Precautions.

Series SV

Dimensions: Series SV1000

Power supply with M12 connector



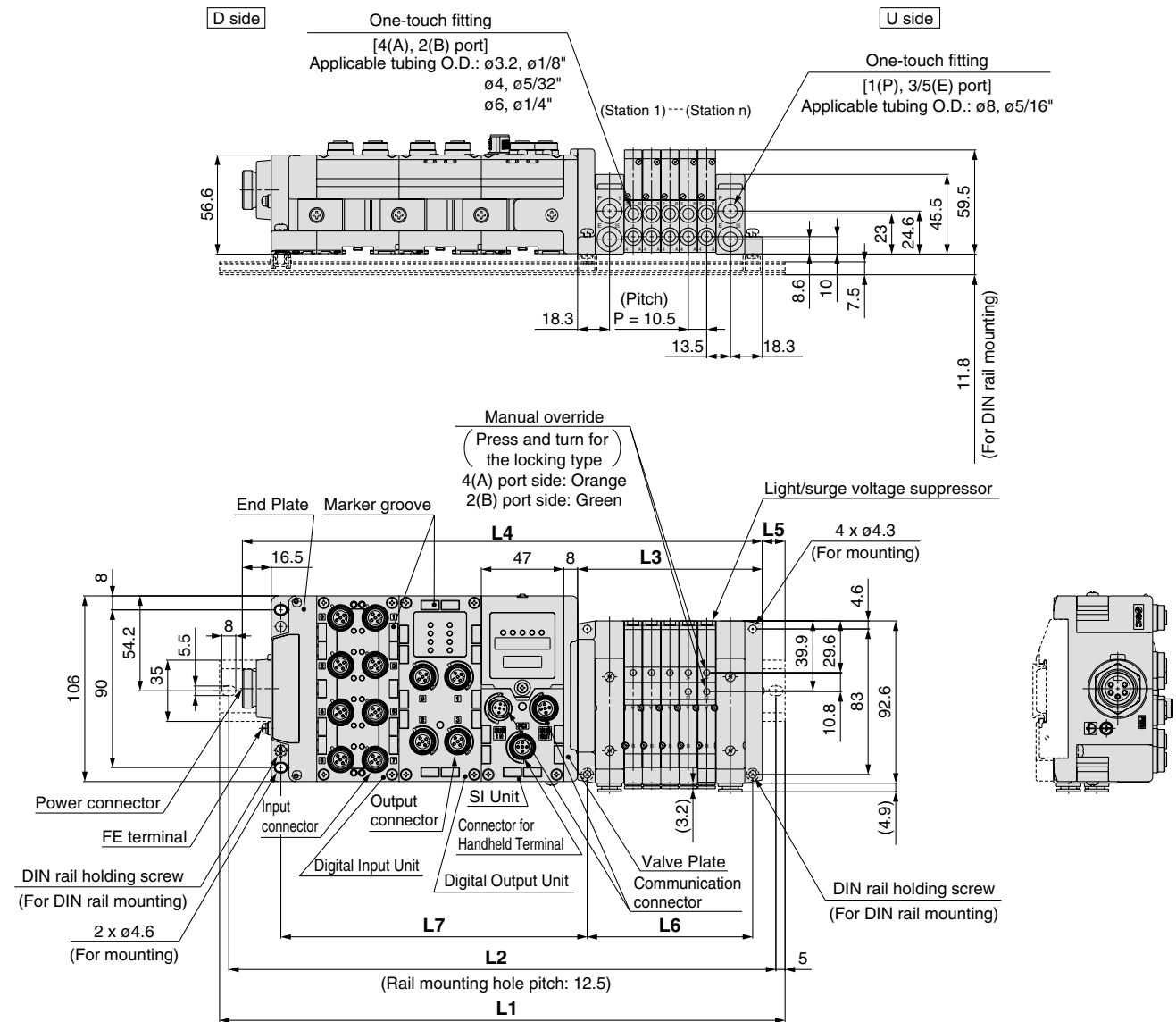
$L2 = L1 - 10.5$
 $L3 = 10.5 \times n1 + 53$
 $L4 = L3 + 81 + 47 \times n2$
 $L5 = (L1 - L4) / 2$
 $L6 = 10.5 \times n1 + 42$
 $L7 = 47 \times n2 + 81$

L1: DIN Rail Overall Length

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

Dimensions: Series SV1000

Power supply with 7/8 inch connector



$L2 = L1 - 10.5$
 $L3 = 10.5 \times n1 + 53$
 $L4 = L3 + 97.5 + 47 \times n2$
 $L5 = (L1 - L4)/2$
 $L6 = 10.5 \times n1 + 42$
 $L7 = 47 \times n2 + 81$

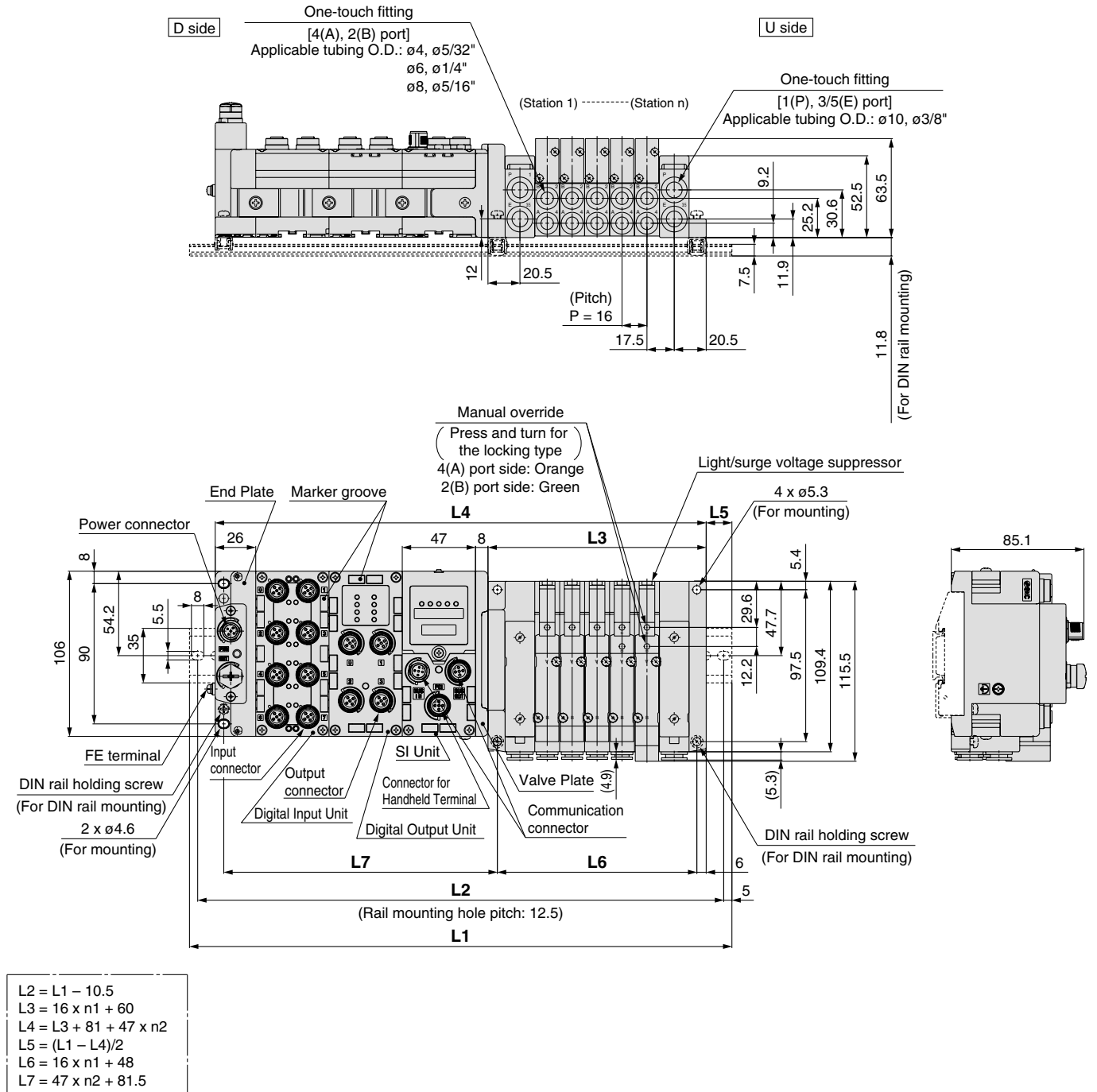
L1: DIN Rail Overall Length

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

Series SV

Dimensions: Series SV2000

Power supply with M12 connector

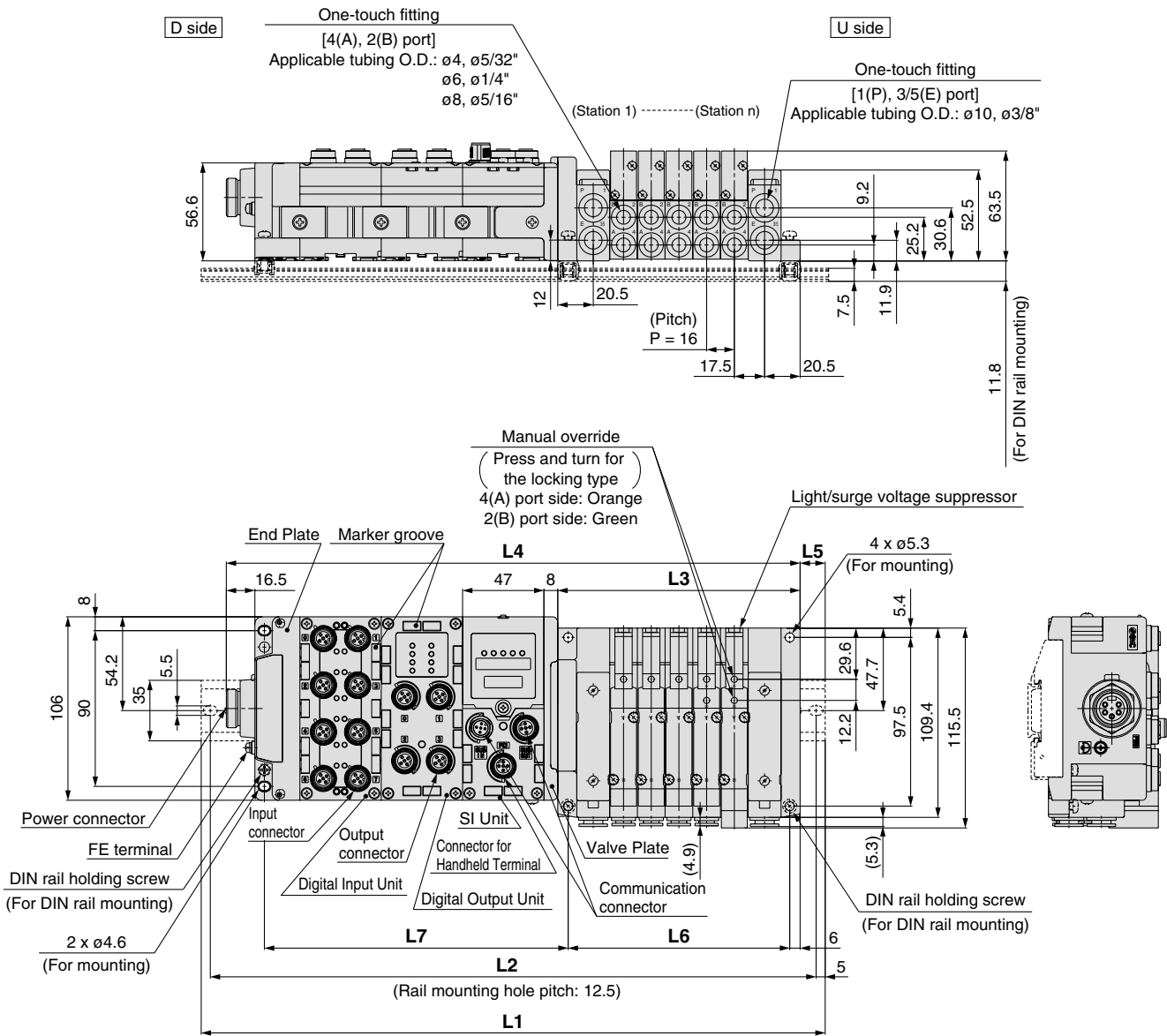


L1: DIN Rail Overall Length

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

Dimensions: Series SV2000

Power supply with 7/8 inch connector



$L2 = L1 - 10.5$
 $L3 = 16 \times n1 + 60$
 $L4 = L3 + 97.5 + 47 \times n2$
 $L5 = (L1 - L4)/2$
 $L6 = 16 \times n1 + 48$
 $L7 = 47 \times n2 + 81.5$

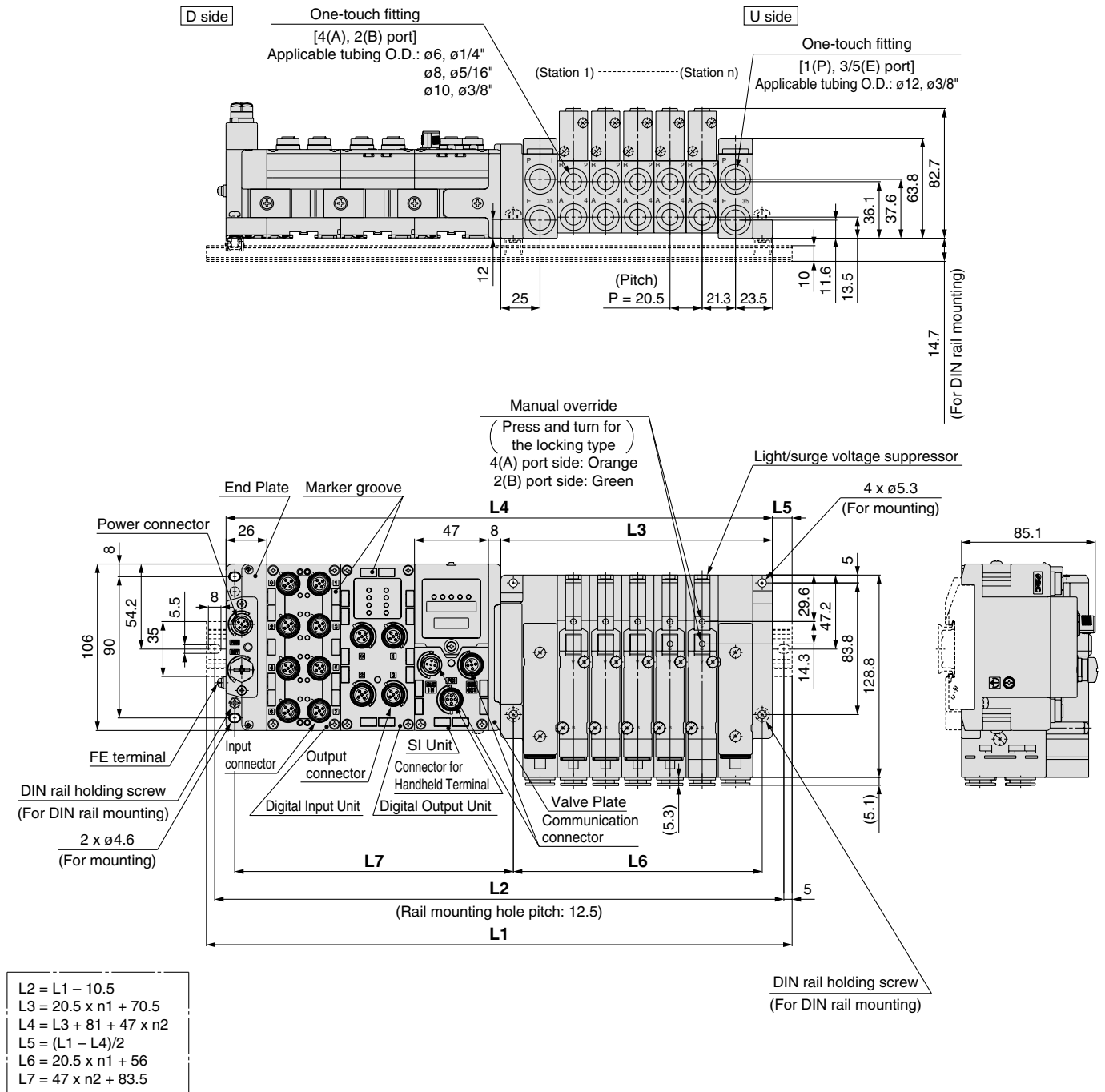
L1: DIN Rail Overall Length

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0	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5
1	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	548
2	310.5	323	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598
3	360.5	373	398	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5	648
4	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	673	698
5	448	473	485.5	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	748
6	498	523	535.5	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5
7	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	798	823	835.5
8	598	610.5	623	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	873	885.5
9	648	660.5	673	685.5	710.5	723	735.5	748	773	785.5	798	823	835.5	848	860.5	885.5	898	910.5	935.5

Series SV

Dimensions: Series SV3000

Power supply with M12 connector

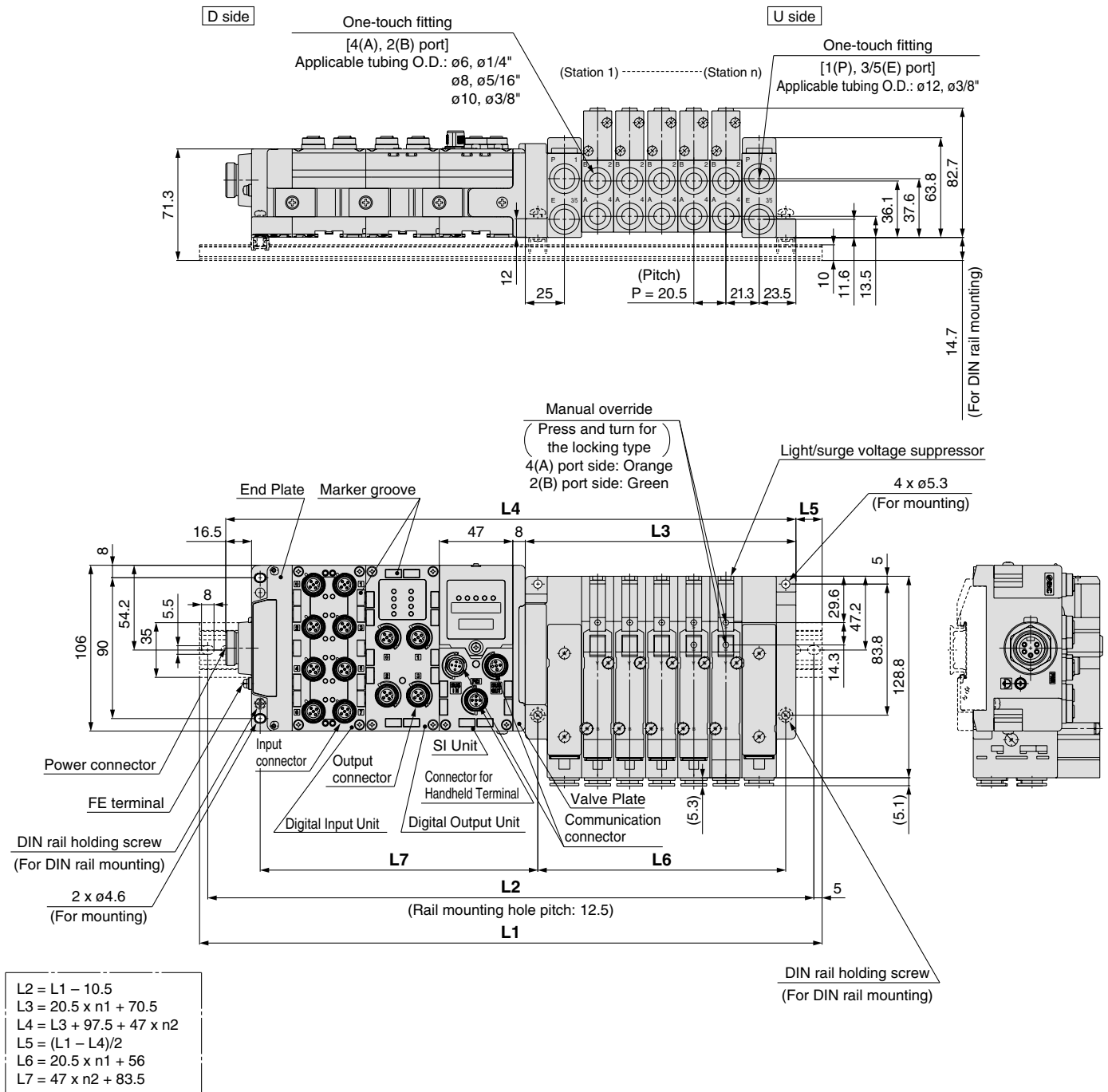


L1: DIN Rail Overall Length

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

Dimensions: Series SV3000

Power supply with 7/8 inch connector



L1: DIN Rail Overall Length

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

Series EX600

Series S0700



How to Order Manifold

SS0750 - 08 C4 SD6Q 2 N 1 - B

Stations

Symbol	Stations
01	1 sta.
⋮	⋮
24 ^{Note)}	24 sta.

Note) Max. number of stations depends on the wiring specifications.

Cylinder port size

Symbol	Port size	
C2	With one-touch fitting for ø2	Metric
C3	With one-touch fitting for ø3.2	
C4	With one-touch fitting for ø4	
CM	Mixed sizes and with port plug ^{Note)}	
N1	With one-touch fitting for ø1/8"	Inch
N3	With one-touch fitting for ø5/32"	
NM	Mixed sizes and with port plug ^{Note)}	

Note) Indicate the size with the manifold specification sheet in the case of CM an NM.

Kit type

Kit type	Symbol	Specifications	Stations	Max. number of stations for special wiring specification	Max. number of solenoids
S kit	SD60	Without SI Unit	1 to 12 sta.	24 sta.	24
	SD6Q	DeviceNet™ type			
	SD6N	PROFIBUS DP type			
	SD6V	CC-Link type			

Note 1) 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.

Note 2) When "Without SI Unit" is specified, Valve Plate to connect the manifold and SI Unit is not mounted. Refer to back page 4 for mounting method.

Note 3) I/O unit cannot be chosen without SI Unit.

Type of actuation	Single type	Double, dual 3 port type
Number of solenoid valves	1	2

End Plate type

—	No end plate
2	Power supply M12 connector (Max. supply current 2A)
3	Power supply 7/8" connector (Max. supply current 8A)

Note) Without SI Unit, the symbol is nil.

Option

Symbol	Specifications
—	No option
B ^{Note 2)}	With back pressure check valve (All sta.)
D	With DIN rail (Standard rail length)
D0	With DIN rail (Without rail)
D□ ^{Note 3)}	With DIN rail length specified (□: Sta.)
K ^{Note 4)}	Special wiring specifications (Except double wiring)
N	Name plate
R	External pilot
S	Built-in silencer

Note 1) When two or more symbols are specified, indicate them alphabetically. ex) "BKN"

Note 2) 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 with the manifold specification sheet.

Note 3) Specified station number shall be longer than manifold station number.

Note 4) When single wiring and double wiring are mixed, specify wiring type of each station with the manifold specification sheet.

Note 5) When "Without SI Unit (SD60)" is specified, "With DIN rail (D)" cannot be selected.

I/O unit sta. number

—	None
1	1 sta.
⋮	⋮
9	9 sta.

Note 1) Without SI Unit, no symbol is considered ("none" option).

Note 2) SI Unit is not included in sta. number.

Note 3) When I/O unit is selected, it is shipped separately (assembled by customer). Refer to attached instruction manual for mounting method.

SI Unit COM.

—	+COM.
N	-COM.

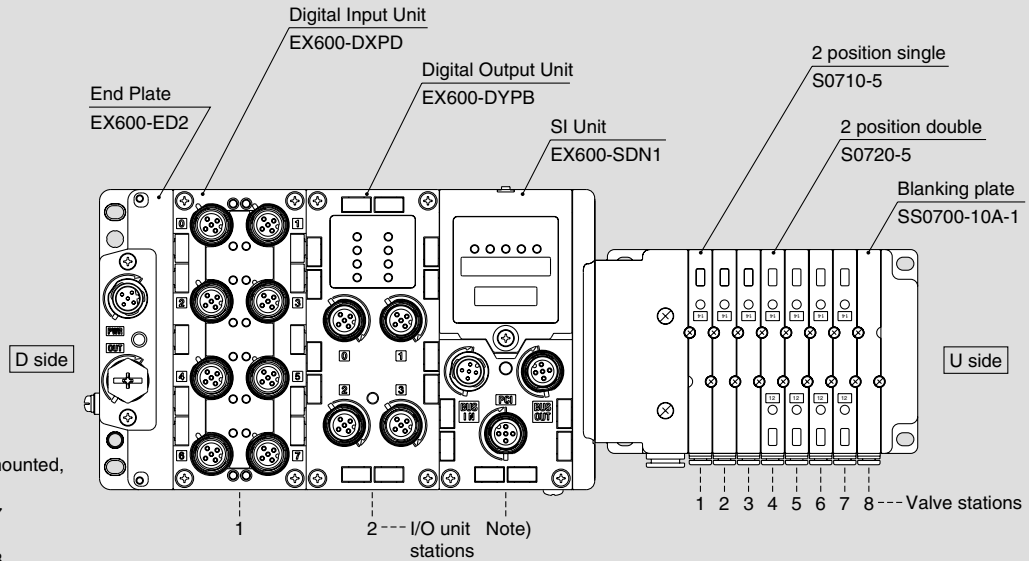
Note) Without SI Unit, leave this option blank (" +COM" option).

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

How to Order Manifold Assembly (Example)

Example (S0700)

Manifold
Power supply with
M12 connector



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

- Digital Input Unit P.27
- Digital Output Unit P.31
- Analog Input Unit P.33

Serial transmission kit

- | | | |
|--------------------|--------------|-------------------------------------|
| SS0750-08C4SD6Q2N2 | 1 set | Manifold base part number |
| * 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) |
| * EX600-DYPB | 1 set | I/O unit part number (Station 2) |

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

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate with the manifold specification sheet.

Enter in order starting from the first station on the D side.

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

How to Order Valves

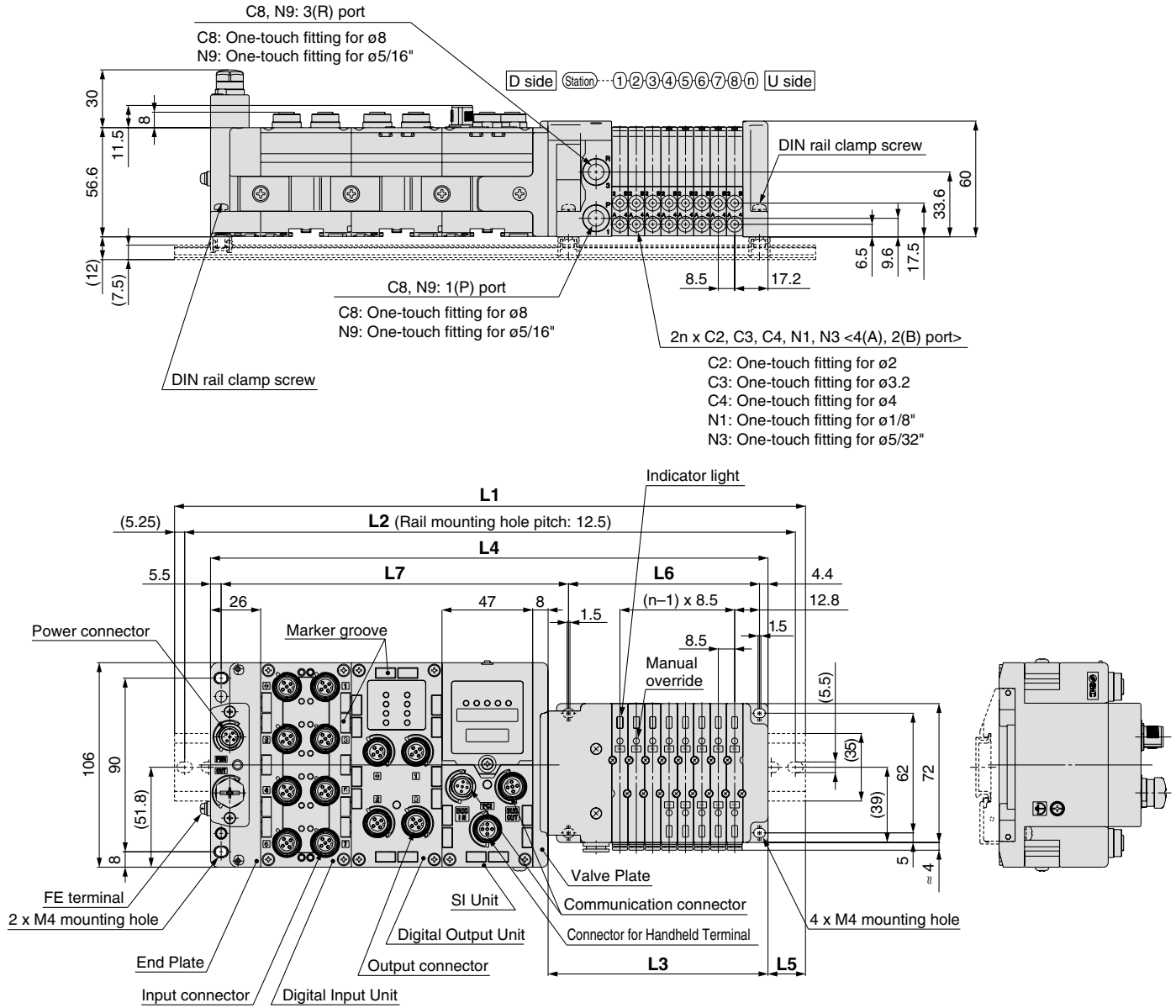
S07 1 0 [] - 5

Type of actuation		Coil voltage						
1	2 position single 	5 24 VDC						
	A 4 position dual 3 port valve (N.C. + N.O.) (Exhaust centre) 							
2	2 position double 	Function						
	B 4 position dual 3 port valve (N.C. + N.O.) (Pressure centre) 							
C 4 position dual 3 port valve (N.C. + N.O.) 		<table border="1"> <thead> <tr> <th>Symbol</th> <th>Specifications</th> </tr> </thead> <tbody> <tr> <td>—</td> <td>Standard</td> </tr> <tr> <td>R</td> <td>External pilot ^{Note)}</td> </tr> </tbody> </table> <p>Note) Dual 3 port type is not applicable.</p>	Symbol	Specifications	—	Standard	R	External pilot ^{Note)}
Symbol	Specifications							
—	Standard							
R	External pilot ^{Note)}							

Series S0700

Dimensions

Power supply with M12 connector



$$L2 = L1 - 10.5$$

$$L3 = 8.5 \times n1 + 46$$

$$L4 = L3 + 81 + 47 \times n2$$

$$L5 = (L1 - L4) / 2$$

$$L6 = 8.5 \times n1 + 31$$

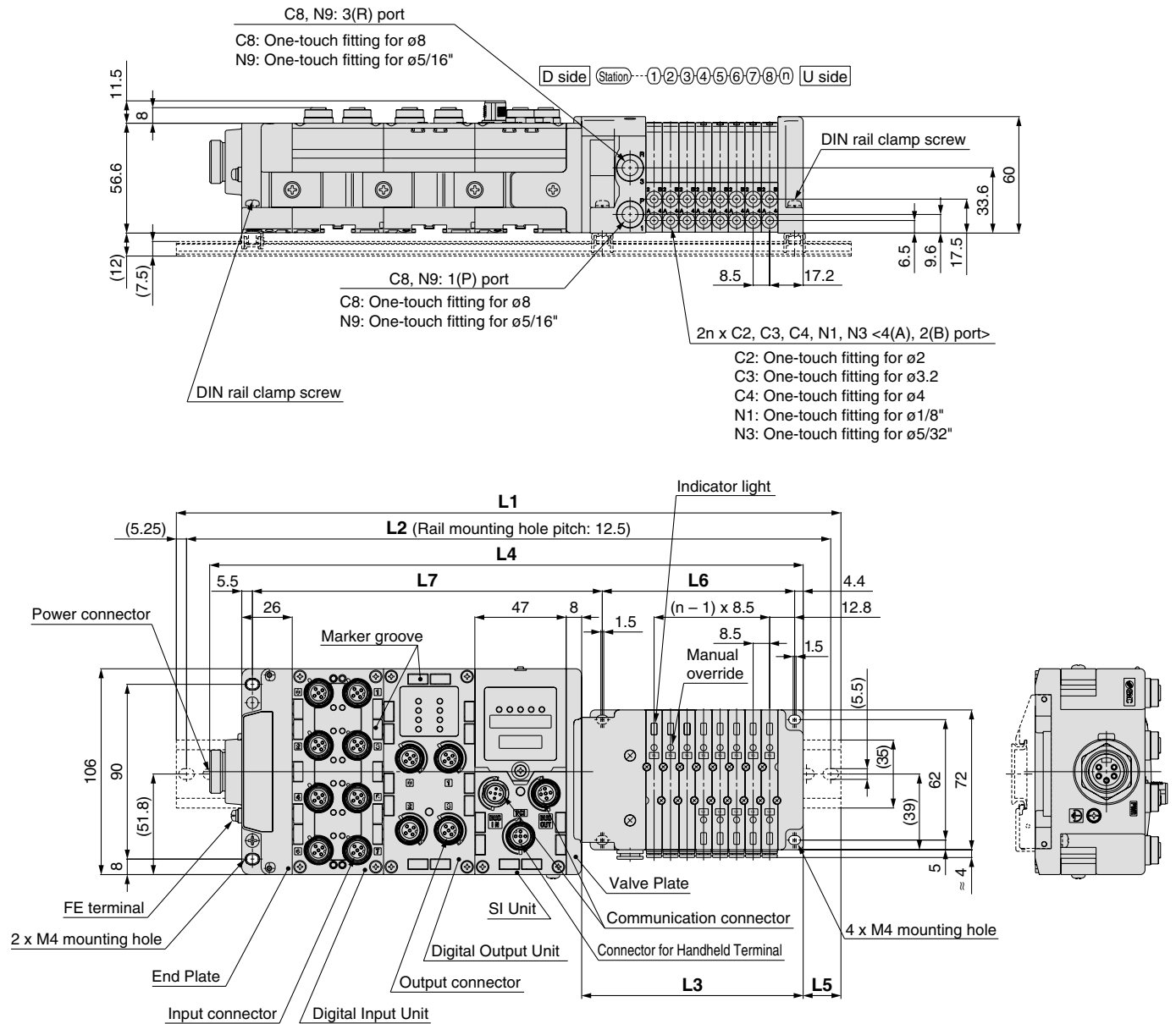
$$L7 = 47 \times n2 + 86.1$$

L1: DIN Rail Overall Length

I/O unit stations (n2) \ Valve stations (n1)	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

Dimensions

Power supply with 7/8 inch connector



$L2 = L1 - 10.5$
 $L3 = 8.5 \times n1 + 46$
 $L4 = L3 + 97.5 + 47 \times n2$
 $L5 = (L1 - L4) / 2$
 $L6 = 8.5 \times n1 + 31$
 $L7 = 47 \times n2 + 86.1$

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	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	360.5	373	385.5
1	235.5	248	248	260.5	273	273	285.5	298	298	310.5	323	323	335.5	348	348	360.5	373	385.5	385.5	398	410.5	410.5	423	435.5
2	285.5	285.5	298	310.5	310.5	323	335.5	335.5	348	360.5	373	373	385.5	398	398	410.5	423	423	435.5	448	448	460.5	473	473
3	323	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	510.5	523
4	373	385.5	398	398	410.5	423	423	435.5	448	448	460.5	473	473	485.5	498	498	510.5	523	523	535.5	548	560.5	560.5	573
5	423	435.5	435.5	448	460.5	460.5	473	485.5	485.5	498	510.5	510.5	523	535.5	548	548	560.5	573	573	585.5	598	598	610.5	623
6	473	473	485.5	498	498	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	660.5	660.5
7	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	698	710.5
8	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	685.5	698	710.5	723	723	735.5	748	748	760.5
9	610.5	623	623	635.5	648	648	660.5	673	673	685.5	698	710.5	710.5	723	735.5	735.5	748	760.5	760.5	773	785.5	785.5	798	810.5

Series EX600

Series VQC1000

How to Order Manifold

VV5QC 1 1 - 08 C6 SD6Q 2 N 1 -

Series VQC1000

Base mounted plug-in

Stations

Symbol	Stations
01	1 sta.
⋮	⋮
24 ^{Note)}	24 sta.

Note) Max. number of stations depends on the wiring specifications.

Cylinder port size

C3	With one-touch fitting for $\phi 3.2$
C4	With one-touch fitting for $\phi 4$
C6	With one-touch fitting for $\phi 6$
M5	M5 thread
CM	Mixed sizes and with port plug
L3	Top ported elbow with one-touch fitting for $\phi 3.2$
L4	Top ported elbow with one-touch fitting for $\phi 4$
L6	Top ported elbow with one-touch fitting for $\phi 6$
L5	M5 thread
B3	Bottom ported elbow with one-touch fitting for $\phi 3.2$
B4	Bottom ported elbow with one-touch fitting for $\phi 4$
B6	Bottom ported elbow with one-touch fitting for $\phi 6$
B5	M5 thread
LM	Mixed port sizes of elbow piping

Note 1) Indicate the size with the manifold specification sheet in the case of CM and LM.

Note 2) Symbol of inch size are as follows:

- N1: $\phi 1/8"$
- N3: $\phi 5/32"$
- N7: $\phi 1/4"$
- NM: Mixed sizes

The top ported elbow is LN□ and the bottom ported elbow is BN□. For NM, specify with the manifold specification sheet.

Kit type

Kit type	Symbol	Specifications	Stations	Max. number of stations for special wiring specification	Max. number of solenoids
S kit	SD60	Without SI Unit	1 to 12 sta.	24 sta.	24
	SD6Q	DeviceNet™ type			
	SD6N	PROFIBUS DP type			
	SD6V	CC-Link type			

Note) Max. station number depends on the number of solenoids.

Add the option symbol "-K" when the combination of single wiring and double wiring is specified.

- I/O unit cannot be chosen without SI Unit.
- When "Without SI Unit" is specified, Valve Plate to connect the manifold and SI Unit is not mounted. Refer to back page 4 for mounting method.

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

Option

—	No option
B ^{Note 2)}	With back pressure check valve (All sta.)
D	With DIN rail (Standard rail length)
D0	DIN rail mounting (Without DIN rail)
D □ ^{Note 3)}	With DIN rail length specified (□: Sta.)
K ^{Note 4)}	Special wiring specifications (Except double wiring)
N	Name plate
R ^{Note 5)}	External pilot
S ^{Note 6)}	Built-in silencer, Direct exhaust

Note 1) When two or more symbols are specified, indicate them alphabetically. Ex.) "-BRS"

Note 2) 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 with the manifold specification sheet.

Note 3) Specified station number shall be longer than manifold station number.

Note 4) When single wiring and double wiring are mixed, specify wiring type of each station with the manifold specification sheet.

Note 5) When external pilot type is used, specify the valve for external pilot type.

Note 6) Built-in silencer type dose not satisfy IP67.

Note 7) When specification change from no DIN rail type to DIN rail mounting type, please consult SMC.

Note 8) When "Without SI Unit (SD60)" is specified, "With DIN rail (D)" cannot be selected.

Note 9) DIN rail is not attached (but shipped together) on the manifold in the case of with DIN rail. Refer to the VQC series catalogue for mounting method.

I/O unit sta. number

—	None
1	1 sta.
⋮	⋮
9	9 sta.

Note 1) Without SI Unit, no symbol is considered ("none" option).

Note 2) SI Unit is not included in I/O unit station number.

Note 3) When I/O unit is selected, it is shipped separately (assembled by customer). Refer to attached instruction manual for mounting method.

SI Unit COM.

—	+COM.
N	-COM.

Note) Without SI Unit, leave this option blank (" +COM" option).

End Plate type

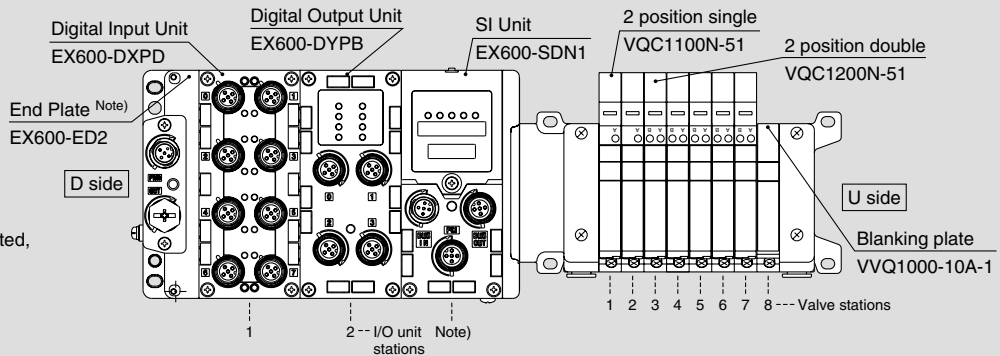
—	No end plate
2	Power supply M12 connector (Max. supply current 2A)
3	Power supply 7/8" connector (Max. supply current 8A)

Note) Without SI Unit, leave this option blank ("no end plate" option).

How to Order Manifold Assembly (Example)

Example (VV5QC11)

Manifold Power supply with M12 connector



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

- Digital Input Unit P.27
- Digital Output Unit P.31
- Analog Input Unit P.33

Serial transmission kit

- VV5QC11-08C6SD6Q2N2 1 set **Manifold base part number**
- * VQC1100N-51 2 sets **Valve part number (Stations 1 to 2)**
- * VQC1200N-51 5 sets **Valve part number (Stations 3 to 7)**
- * VVQ1000-10A-1 1 set **Blanking plate number (Station 8)**
- * EX600-DXP 1 set **I/O unit part number (Station 1)**
- * EX600-DYP 1 set **I/O unit part number (Station 2)**

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

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate with the manifold specification sheet.

Enter in order starting from the first station on the D side. When entry of part numbers becomes complicated, indicate with the manifold specification sheet.

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

How to Order Valves

VQC 1 1 0 0 - 5 1

Series VQC1000

Type of actuation

1	2 position single (A) (B) 4 2 5 1 3 (R1) (P) (R2)	Note) A	4 position dual 3 port valve (A) (B) 4 2 5 1 3 (R1) (P) (R2) N.C. (P) N.C.
	2 position double (Metal) (A) (B) 4 2 5 1 3 (R1) (P) (R2)		Note) B
2	2 position double (Rubber) (A) (B) 4 2 5 1 3 (R1) (P) (R2)	Note) C	4 position dual 3 port valve (A) (B) 4 2 5 1 3 (R1) (P) (R2) N.C. (P) N.O.
	3 position closed centre (A) (B) 4 2 5 1 3 (R1) (P) (R2)		Note) Rubber seal type only
3	3 position exhaust centre (A) (B) 4 2 5 1 3 (R1) (P) (R2)		
4	3 position pressure centre (A) (B) 4 2 5 1 3 (R1) (P) (R2)		
5	3 position pressure centre (A) (B) 4 2 5 1 3 (R1) (P) (R2)		

Coil voltage

5 24 VDC

Function

—	Standard (0.4 W)
B	High speed response type (0.95 W)
K Note 2)	High pressure type (1.0 MPa)
N Note 3)	Negative common
R Note 4)	External pilot

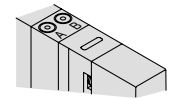
- Note 1) When two or more symbols are specified, indicate them alphabetically. However, combination of "B" and "K" is not possible.
- Note 2) Metal seal type only
- Note 3) When "-COM." is specified for the SI Unit, select and mount the valve of negative common.
- Note 4) Dual 3 port type is not applicable.

Seal

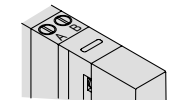
0	Metal seal
1	Rubber seal

Manual override

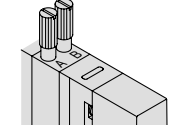
Nil: Non-locking push type (Tool required)



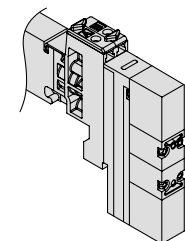
B: Locking type (Tool required)



C: Locking type (Manual)



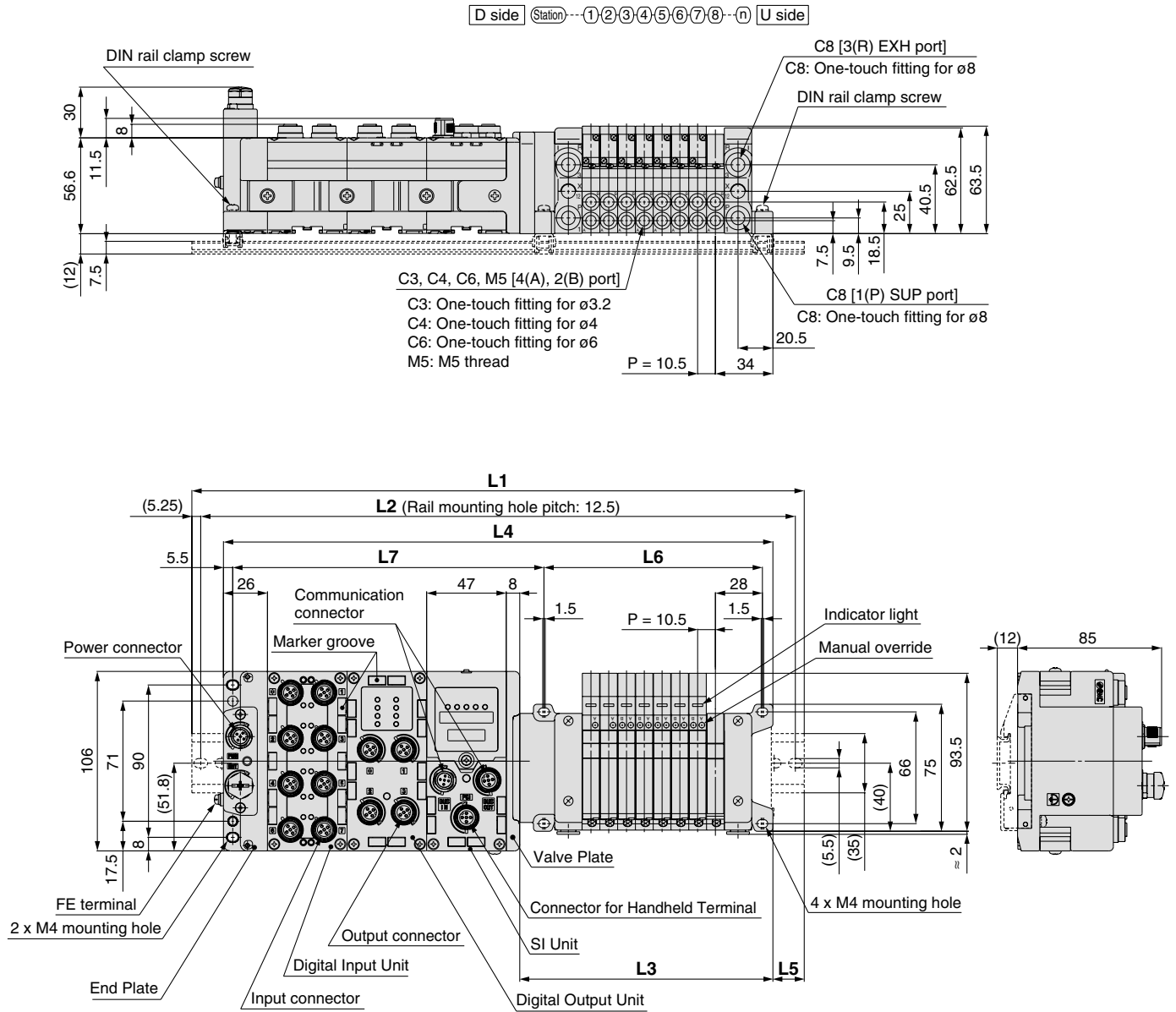
D: Slide locking type (Manual)



Series VQC1000

Dimensions

Power supply with M12 connector



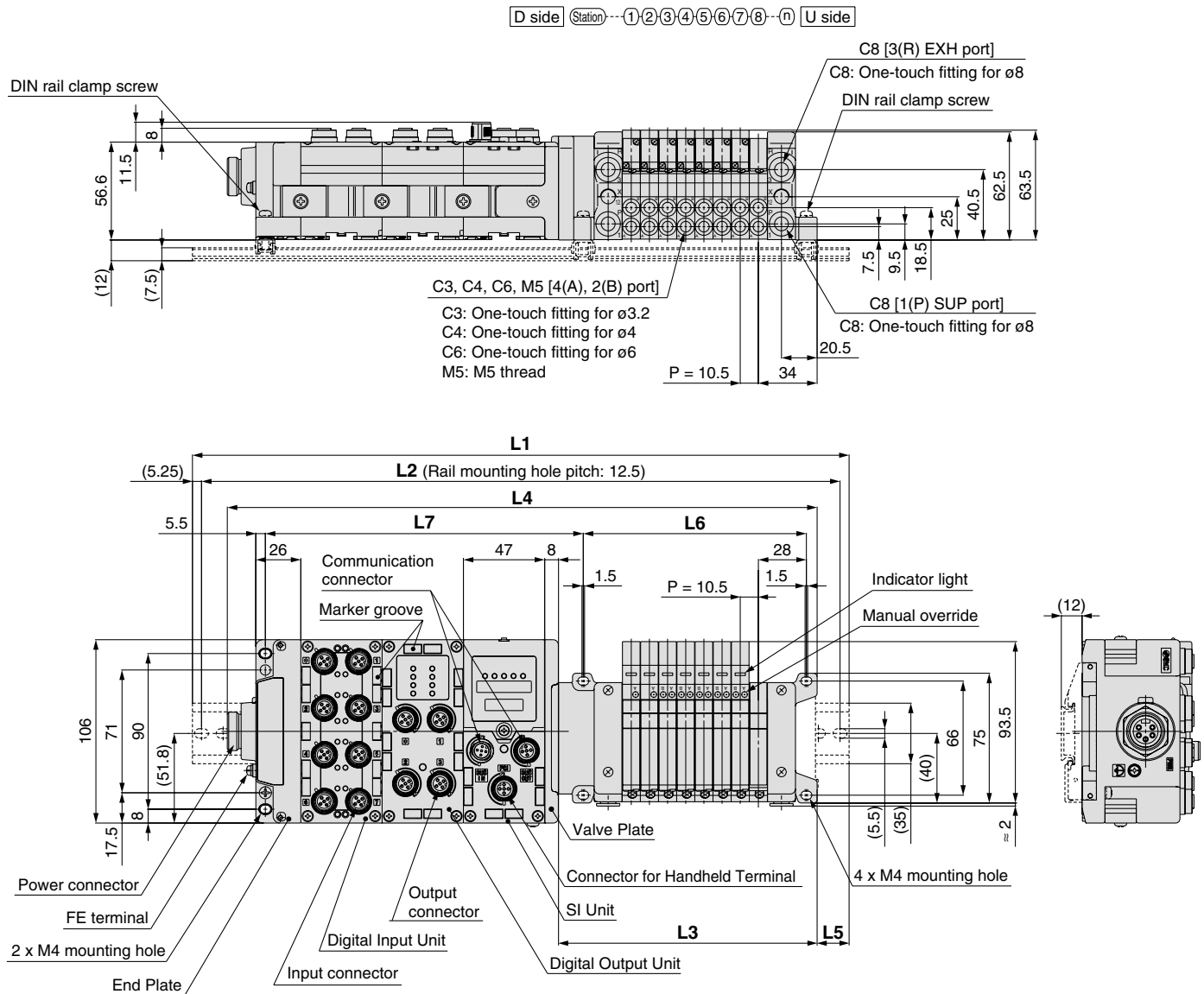
$L2 = L1 - 10.5$
 $L3 = 10.5 \times n1 + 65.5$
 $L4 = L3 + 81 + 47 \times n2$
 $L5 = (L1 - L4) / 2$
 $L6 = 10.5 \times n1 + 45$
 $L7 = 47 \times n2 + 89.8$

L1: DIN Rail Overall Length

I/O unit stations (n2) \ Valve stations (n1)	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	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373	385.5	398	398	410.5	423	435.5
1	235.5	248	260.5	273	285.5	298	298	310.5	323	335.5	348	360.5	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5
2	285.5	298	310.5	323	323	335.5	348	360.5	373	385.5	398	398	410.5	423	435.5	448	460.5	460.5	473	485.5	498	510.5	523	523
3	335.5	348	360.5	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	560.5	560.5	573
4	385.5	385.5	398	410.5	423	435.5	448	460.5	460.5	473	485.5	498	510.5	523	523	535.5	548	560.5	573	585.5	585.5	598	610.5	623
5	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	548	560.5	573	585.5	598	610.5	623	623	635.5	648	660.5	673
6	473	485.5	498	510.5	523	523	535.5	548	560.5	573	585.5	585.5	598	610.5	623	635.5	648	648	660.5	673	685.5	698	710.5	710.5
7	523	535.5	548	548	560.5	573	585.5	598	610.5	610.5	623	635.5	648	660.5	673	685.5	685.5	698	710.5	723	735.5	748	748	760.5
8	573	585.5	585.5	598	610.5	623	635.5	648	648	660.5	673	685.5	698	710.5	710.5	723	735.5	748	760.5	773	773	785.5	798	810.5
9	610.5	623	635.5	648	660.5	673	673	685.5	698	710.5	723	735.5	748	748	760.5	773	785.5	798	810.5	810.5	823	835.5	848	860.5

Dimensions

Power supply with 7/8 inch connector



$L2 = L1 - 10.5$
 $L3 = 10.5 \times n1 + 65.5$
 $L4 = L3 + 97.5 + 47 \times n2$
 $L5 = (L1 - L4) / 2$
 $L6 = 10.5 \times n1 + 45$
 $L7 = 47 \times n2 + 89.8$

L1: DIN Rail Overall Length

I/O unit stations (n2) \ Valve stations (n1)	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	210.5	223	235.5	235.5	248	260.5	273	285.5	298	298	310.5	323	335.5	348	360.5	373	373	385.5	398	410.5	423	435.5	435.5	448
1	260.5	273	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373	385.5	398	398	410.5	423	435.5	448	460.5	460.5	473	485.5	498
2	298	310.5	323	335.5	348	360.5	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	498	510.5	523	535.5	548	548
3	348	360.5	373	385.5	398	398	410.5	423	435.5	448	460.5	460.5	473	485.5	498	510.5	523	523	535.5	548	560.5	573	585.5	598
4	398	410.5	423	423	435.5	448	460.5	473	485.5	498	498	510.5	523	535.5	548	560.5	560.5	573	585.5	598	610.5	623	623	635.5
5	448	460.5	460.5	473	485.5	498	510.5	523	523	535.5	548	560.5	573	585.5	585.5	598	610.5	623	635.5	648	660.5	660.5	673	685.5
6	485.5	498	510.5	523	535.5	548	560.5	560.5	573	585.5	598	610.5	623	623	635.5	648	660.5	673	685.5	685.5	698	710.5	723	735.5
7	535.5	548	560.5	573	585.5	585.5	598	610.5	623	635.5	648	648	660.5	673	685.5	698	710.5	723	723	735.5	748	760.5	773	785.5
8	585.5	598	610.5	623	623	635.5	648	660.5	673	685.5	685.5	698	710.5	723	735.5	748	748	760.5	773	785.5	798	810.5	810.5	823
9	635.5	648	648	660.5	673	685.5	698	710.5	710.5	723	735.5	748	760.5	773	785.5	785.5	798	810.5	823	835.5	848	848	860.5	873

Series EX600

Series VQC2000 C€

How to Order Manifold

VV5QC 2 1 - 08 C8 SD6Q 2 N 1 -

Series VQC2000

Base mounted plug-in

Stations

Symbol	Stations
01	1 sta.
⋮	⋮
24 ^{Note)}	24 sta.

Note) Max. number of stations depends on the wiring specifications.

Cylinder port size

C4	With one-touch fitting for ø4
C6	With one-touch fitting for ø6
C8	With one-touch fitting for ø8
CM	Mixed sizes and with port plug
L4	Top ported elbow with ø4 one-touch fitting
L6	Top ported elbow with ø6 one-touch fitting
L8	Top ported elbow with ø8 one-touch fitting
B4	Bottom ported elbow with ø4 one-touch fitting
B6	Bottom ported elbow with ø6 one-touch fitting
B8	Bottom ported elbow with ø8 one-touch fitting
LM	Mixed port sizes of elbow piping

Note 1) Indicate the size with the manifold specification sheet in the case of CM and LM.

Note 2) Symbol for inch sizes are as follows:

- N3: ø5/32"
- N7: ø1/4"
- N9: ø5/16"
- NM: Mixed sizes

The top ported elbow is LN□ and the bottom ported elbow is BN□. For NM, specify with the manifold specification sheet.

Kit type

Kit type	Symbol	Specifications	Stations	Max. number of stations for special wiring specification	Max. number of solenoids
S kit	SD60	Without SI Unit	1 to 12 sta.	24 sta.	24
	SD6Q	DeviceNet™ type			
	SD6N	PROFIBUS DP type			
	SD6V	CC-Link type			

Note 1) Max. station number depends on the number of solenoids.

Add the option symbol "K" when the combination of single wiring and double wiring is specified.

Note 2) I/O unit cannot be chosen without SI Unit.

Note 3) When "Without SI Unit" is specified, Valve Plate to connect the manifold and SI Unit is not mounted. Refer to back page 4 for mounting method.

End Plate type

—	No end plate
2	Power supply M12 connector (Max. supply current 2A)
3	Power supply 7/8" connector (Max. supply current 8A)

Note) Without SI Unit, leave this option blank ("no end plate" option).

Option

—	No option
B ^{Note 2)}	With back pressure check valve (All sta.)
D ^{Note 3)}	With DIN rail (Standard rail length)
DO	DIN rail mounting (Without DIN rail)
D □ ^{Note 4)}	With DIN rail length specified (□: Sta.)
K ^{Note 5)}	Special wiring specifications (Except double wiring)
N	Name plate
R ^{Note 6)}	External pilot
S ^{Note 7)}	Built-in silencer, Direct exhaust
T ^{Note 8)}	U side P, R port on both sides

Note 1) When two or more symbols are specified, indicate them alphabetically. Ex.) "BRS"

Note 2) 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 with the manifold specification sheet.

Note 3) When DIN rail mounting (with DIN rail) is selected with a power supply 7/8-inch connector for End Plate of the VQC2000 series, and I/O unit station number is 9, and max. valve station number is 23. DIN rail mount cannot be specified for 24 stations. (Refer to the DIN rail total length on page 20.)

Note 4) Specified station number shall be longer than manifold station number.

Note 5) When single wiring and double wiring are mixed, specify wiring type of each station with the manifold specification sheet.

Note 6) When external pilot type is used, specify the valve for external pilot type.

Note 7) Built-in silencer type does not satisfy IP67.

Note 8) SUP and EXH port on both sides of U side (on cylinder port side and coil side.) Port has one-touch fitting for ø12.

Note 9) When specification change from no DIN rail type to DIN rail mounting type, please consult SMC.

Note 10) When "Without SI Unit (SD60)" is specified, "With DIN rail (D)" cannot be selected.

Note 11) DIN rail is not attached (but shipped together) on the manifold in the case of with DIN rail. Refer to the VQC series catalogue for mounting method.

I/O unit sta. number

—	None
1	1 sta.
⋮	⋮
9	9 sta.

Note 1) Without SI Unit, no symbol is considered ("none" option).

Note 2) SI Unit is not included in I/O unit station number.

Note 3) When I/O unit is selected, it is shipped separately (assembled by customer). Refer to attached instruction manual for mounting method.

SI Unit COM.

—	+COM.
N	-COM.

Note) Without SI Unit, leave this option blank ("+COM" option).

How to Order Valves

VQC2100 - **5** **1**

Series VQC2000

Type of actuation

1	2 position single (A)(B) 4 2 5 1 3 (R1)(P)(R2)	Note) A	4 position dual 3 port valve (A) (B) 4 2 5 1 3 (R1) (P) (R2) N.C. (P) N.C.
	2 position double (Metal) (A)(B) 4 2 5 1 3 (R1)(P)(R2)	Note) B	4 position dual 3 port valve (B) (A) (B) 4 2 5 1 3 (R1) (P) (R2) N.O. (P) N.O.
2	2 position double (Rubber) (A)(B) 4 2 5 1 3 (R1)(P)(R2)	Note) C	4 position dual 3 port valve (A) (B) (C) 4 2 5 1 3 (R1) (P) (R2) N.C. (P) N.O.
3	3 position closed centre (A) (B) 4 2 5 1 3 (R1)(P)(R2)	Note) Rubber seal type only	
	3 position exhaust centre (A) (B) 4 2 5 1 3 (R1)(P)(R2)		
	3 position pressure centre (A) (B) 4 2 5 1 3 (R1)(P)(R2)		

Seal

0	Metal seal
1	Rubber seal

Function

—	Standard (0.4 W)
B	High speed response type (0.95 W)
K Note 2)	High pressure type (1.0 MPa)
N Note 3)	Negative common
R Note 4)	External pilot

Note 1) When two or more symbols are specified, indicate them alphabetically. However, combination of "B" and "K" is not possible.

Note 2) Metal seal type only

Note 3) When "-COM." is specified for SI Unit, select and mount the valve of negative common.

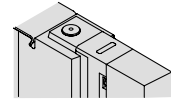
Note 4) Dual 3 port type is not applicable.

Coil voltage

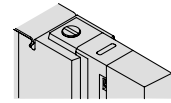
5	24 VDC
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Manual override

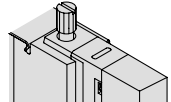
—: Non-locking push type
(Tool required)



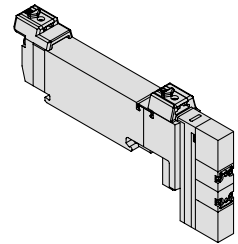
B: Locking type
(Tool required)



C: Locking type
(Manual)



D: Slide locking type
(Manual)

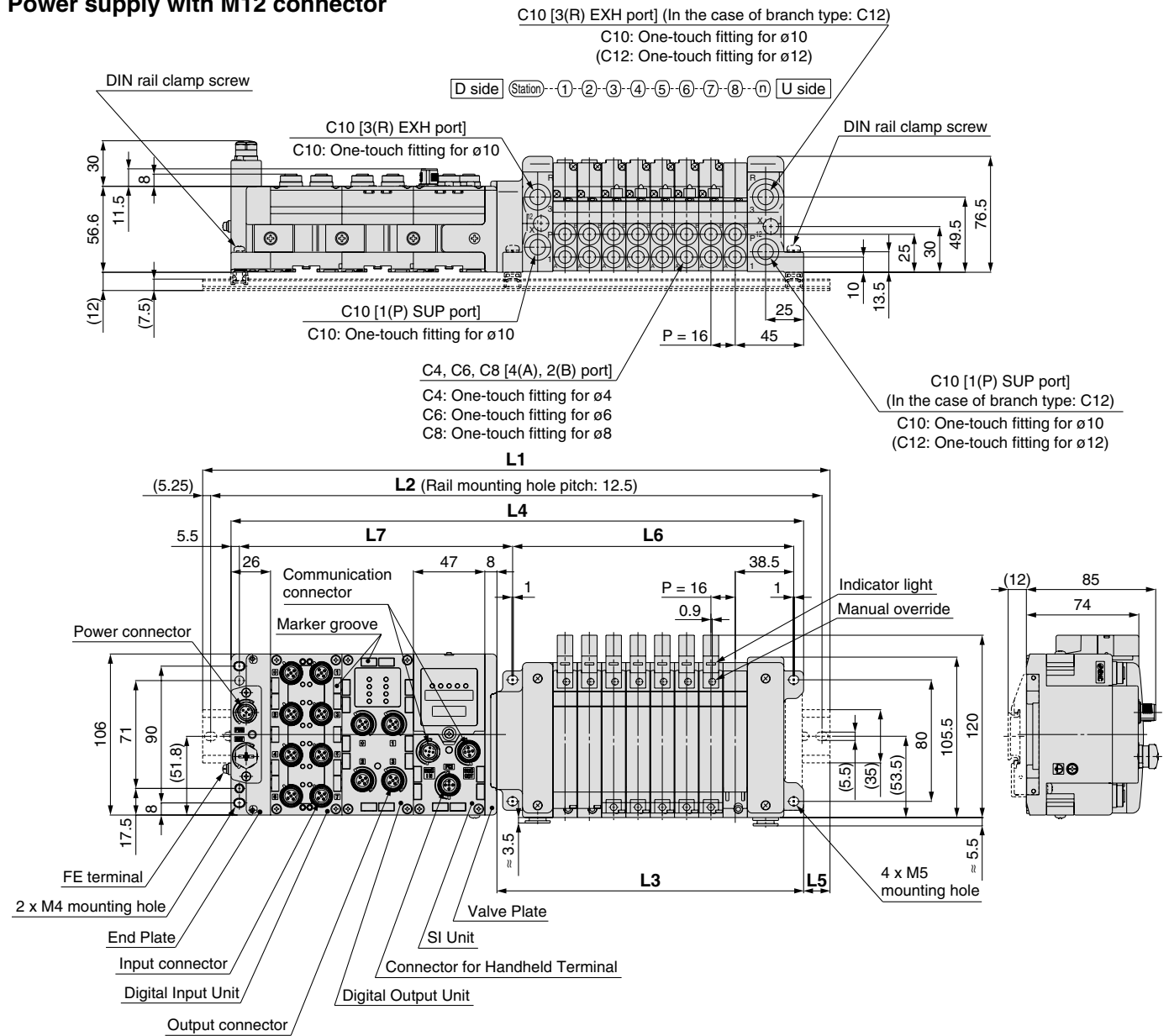


Refer to the catalogue of each series for details on manifold solenoid valve specifications, Common Precautions and Specific Product Precautions.

Series VQC2000

Dimensions

Power supply with M12 connector



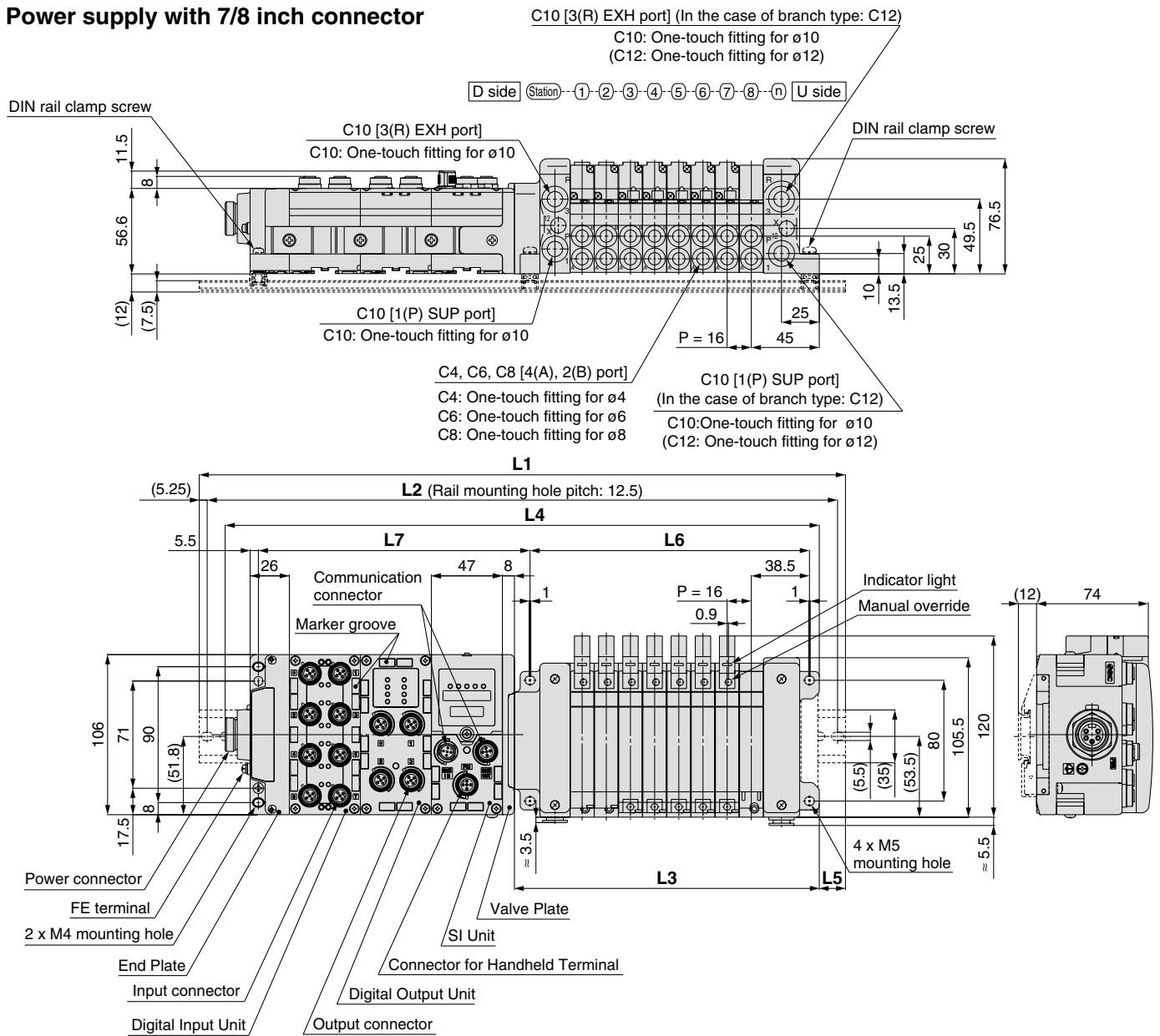
$L2 = L1 - 10.5$
 $L3 = 16 \times n1 + 73.8$
 $L4 = L3 + 81 + 47 \times n2$
 $L5 = (L1 - L4) / 2$
 $L6 = 16 \times n1 + 57$
 $L7 = 47 \times n2 + 85.8$

L1: DIN Rail Overall Length

I/O unit stations (n2) \ Valve stations (n1)	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	210.5	223	235.5	260.5	273	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573
1	248	273	285.5	298	323	335.5	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573	585.5	610.5	623
2	298	323	335.5	348	360.5	385.5	398	410.5	423	448	460.5	473	498	510.5	523	535.5	560.5	573	585.5	610.5	623	635.5	648	673
3	348	360.5	385.5	398	410.5	423	448	460.5	473	498	510.5	523	535.5	560.5	573	585.5	598	623	635.5	648	673	685.5	698	710.5
4	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	573	585.5	598	623	635.5	648	673	685.5	698	710.5	735.5	748	760.5
5	448	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5	685.5	698	710.5	735.5	748	760.5	773	798	810.5
6	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5	685.5	698	710.5	723	748	760.5	773	798	810.5	823	835.5	860.5
7	535.5	548	573	585.5	598	610.5	635.5	648	660.5	685.5	698	710.5	723	748	760.5	773	798	810.5	823	835.5	860.5	873	885.5	898
8	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	748	760.5	773	785.5	810.5	823	835.5	860.5	873	885.5	898	923	935.5	948
9	635.5	648	660.5	673	698	710.5	723	748	760.5	773	785.5	810.5	823	835.5	848	873	885.5	898	923	935.5	948	960.5	985.5	998.5

Dimensions

Power supply with 7/8 inch connector



$L2 = L1 - 10.5$
 $L3 = 16 \times n1 + 73.8$
 $L4 = L3 + 97.5 + 47 \times n2$
 $L5 = (L1 - L4) / 2$
 $L6 = 16 \times n1 + 57$
 $L7 = 47 \times n2 + 85.8$

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	223	235.5	260.5	273	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	485.5	498	510.5	523	548	560.5	573	585.5
1	273	285.5	298	323	335.5	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573	585.5	610.5	623	635.5
2	323	335.5	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	535.5	560.5	573	585.5	610.5	623	635.5	648	673	685.5
3	360.5	385.5	398	410.5	423	448	460.5	473	498	510.5	523	535.5	560.5	573	585.5	610.5	623	635.5	648	673	685.5	698	710.5	735.5
4	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	573	585.5	598	623	635.5	648	673	685.5	698	710.5	735.5	748	760.5	785.5
5	460.5	473	485.5	510.5	523	535.5	560.5	573	585.5	598	623	635.5	648	660.5	685.5	698	710.5	735.5	748	760.5	773	798	810.5	823
6	510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5	685.5	698	710.5	735.5	748	760.5	773	798	810.5	823	835.5	860.5	873
7	548	573	585.5	598	610.5	635.5	648	660.5	685.5	698	710.5	723	748	760.5	773	798	810.5	823	835.5	860.5	873	885.5	910.5	923
8	598	610.5	635.5	648	660.5	685.5	698	710.5	723	748	760.5	773	785.5	810.5	823	835.5	860.5	873	885.5	898	923	935.5	948	973
9	648	660.5	673	698	710.5	723	748	760.5	773	785.5	810.5	823	835.5	860.5	873	885.5	898	923	935.5	948	960.5	985.5	985.5	—

Series EX600

Series VQC4000 C€

How to Order Manifold

VV5QC 4 1 - 16 02 [] SD6Q 2 N 1 - []

Series VQC4000

Base mounted plug-in

Stations

Symbol	Stations
01	1 sta.
⋮	⋮
16 ^{Note)}	16 sta.

Note) Max. number of stations depends on the wiring specifications.

Cylinder port size

C8	With one-touch fitting for ø8
C10	With one-touch fitting for ø10
C12	With one-touch fitting for ø12
02	1/4
03	3/8
B	Bottom ported 1/4
CM	Mixed sizes

Thread type

—	Rc
F	G
T	NPT/NPTF

Kit type

Kit type	Symbol	Specifications	Stations	Max. number of stations for special wiring specification	Max. number of solenoids
S kit	SD60	Without SI Unit	1 to 12 sta.	16 sta.	24
	SD6Q	DeviceNet™ type			
	SD6N	PROFIBUS DP type			
	SD6V	CC-Link type			

Note 1) Max. station number depends on the number of solenoids.
Add the option symbol "-K" when the combination of single wiring and double wiring is specified.

Note 2) I/O unit cannot be chosen without SI Unit.

Note 3) When "Without SI Unit" is specified, Valve Plate to connect the manifold and SI Unit is not mounted. Refer to back page 4 for mounting method.

Option

—	No option
K ^{Note)}	Special wiring specifications (Except double wiring)

Note) When single wiring and double wiring are mixed, specify wiring type of each station with the manifold specification sheet.

I/O unit sta. number

—	None
1	1 sta.
⋮	⋮
9	9 sta.

Note 1) Without SI Unit, no symbol is considered ("none" option).

Note 2) SI Unit is not included in I/O unit station number.

Note 3) When I/O unit is selected, it is shipped separately (assembled by customer). Refer to attached instruction manual for mounting method.

SI Unit COM.

—	+COM.
N	-COM.

Note) Without SI Unit, leave this option blank ("+COM" option).

End Plate type

—	No end plate
2	Power supply M12 connector (Max. supply current 2A)
3	Power supply 7/8" connector (Max. supply current 8A)

Note) Without SI Unit, leave this option blank ("no end plate" option).

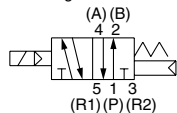
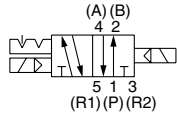
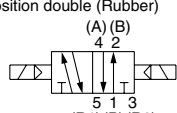
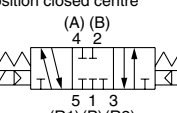
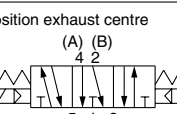
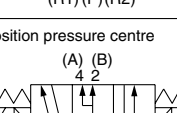
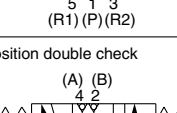
Refer to the catalogue of each series for details on manifold solenoid valve specifications, Common Precautions and Specific Product Precautions.

How to Order Valves

VQC4 1 0 0 **-5**

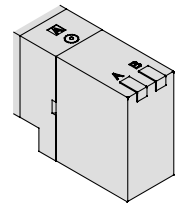
Series VQC4000

Type of actuation

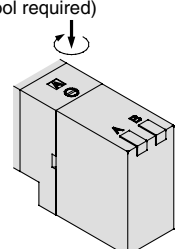
1	2 position single  (A) (B) 4 2 5 1 3 (R1) (P) (R2)
2	2 position double (Metal)  (A) (B) 4 2 5 1 3 (R1) (P) (R2)
	2 position double (Rubber)  (A) (B) 4 2 5 1 3 (R1) (P) (R2)
3	3 position closed centre  (A) (B) 4 2 5 1 3 (R1) (P) (R2)
4	3 position exhaust centre  (A) (B) 4 2 5 1 3 (R1) (P) (R2)
5	3 position pressure centre  (A) (B) 4 2 5 1 3 (R1) (P) (R2)
6	3 position double check  (A) (B) 4 2 5 1 3 (R1) (P) (R2)

Manual override

—: Non-locking push type
(Tool required)



B: Locking type
(Tool required)



Light/surge voltage suppressor

—	With
E	Without light, with surge voltage suppressor

Coil voltage

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

Function

—	Standard (1 W)
R	External pilot
Y <small>Note 2)</small>	Low wattage type (0.5 W)



Note 1) When two or more symbols are specified, indicate them alphabetically.

Note 2) Suitable for an extended energizing period.

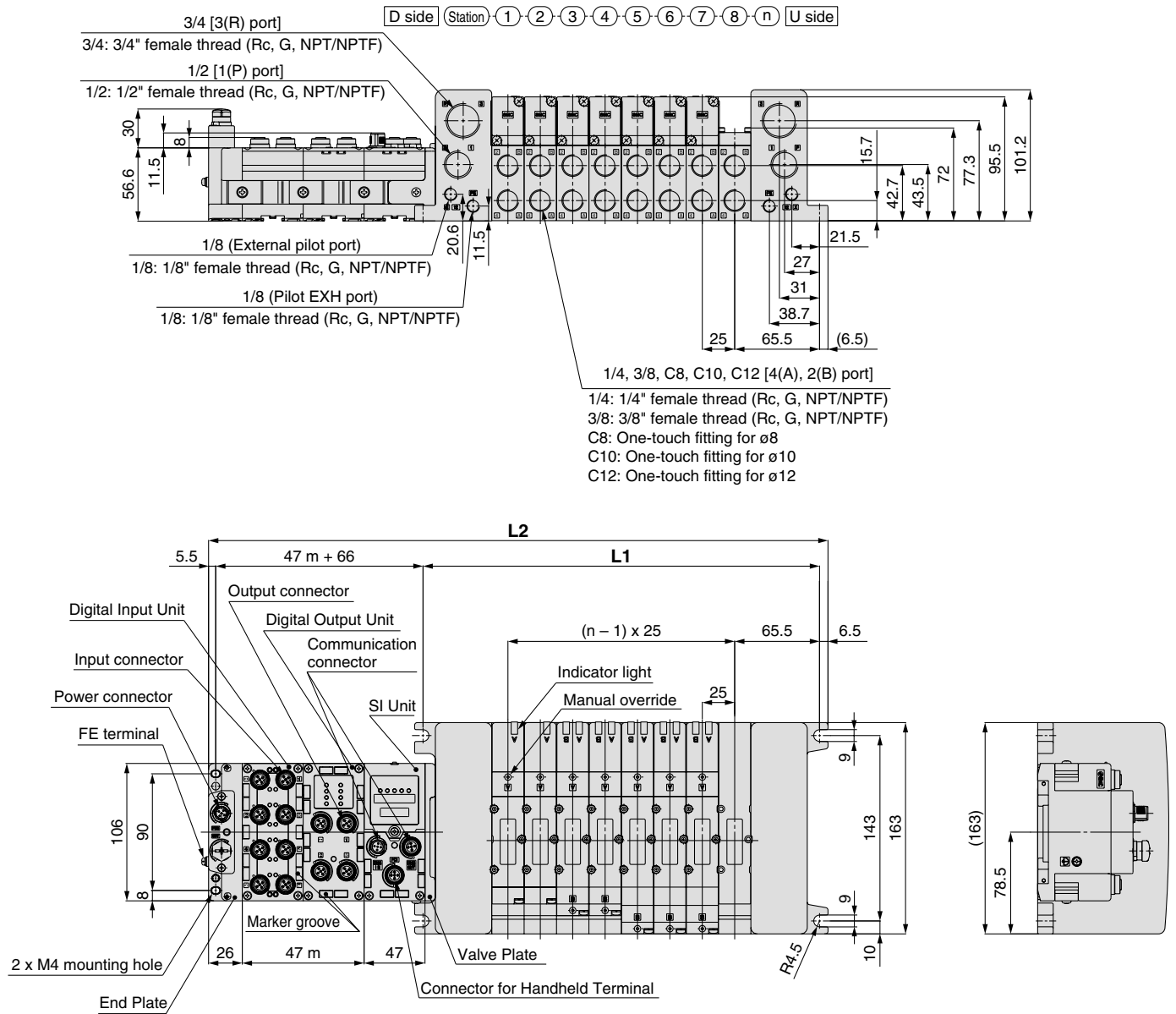
Seal

0	Metal seal
1	Rubber seal

Series VQC4000

Dimensions

Power supply with M12 connector



Formulas

$$L1 = 25n + 106$$

$$L2 = 25n + 184$$

* L2 is the dimension without I/O unit. Add 47 mm for each additional I/O unit.

* "m" is number of I/O unit.

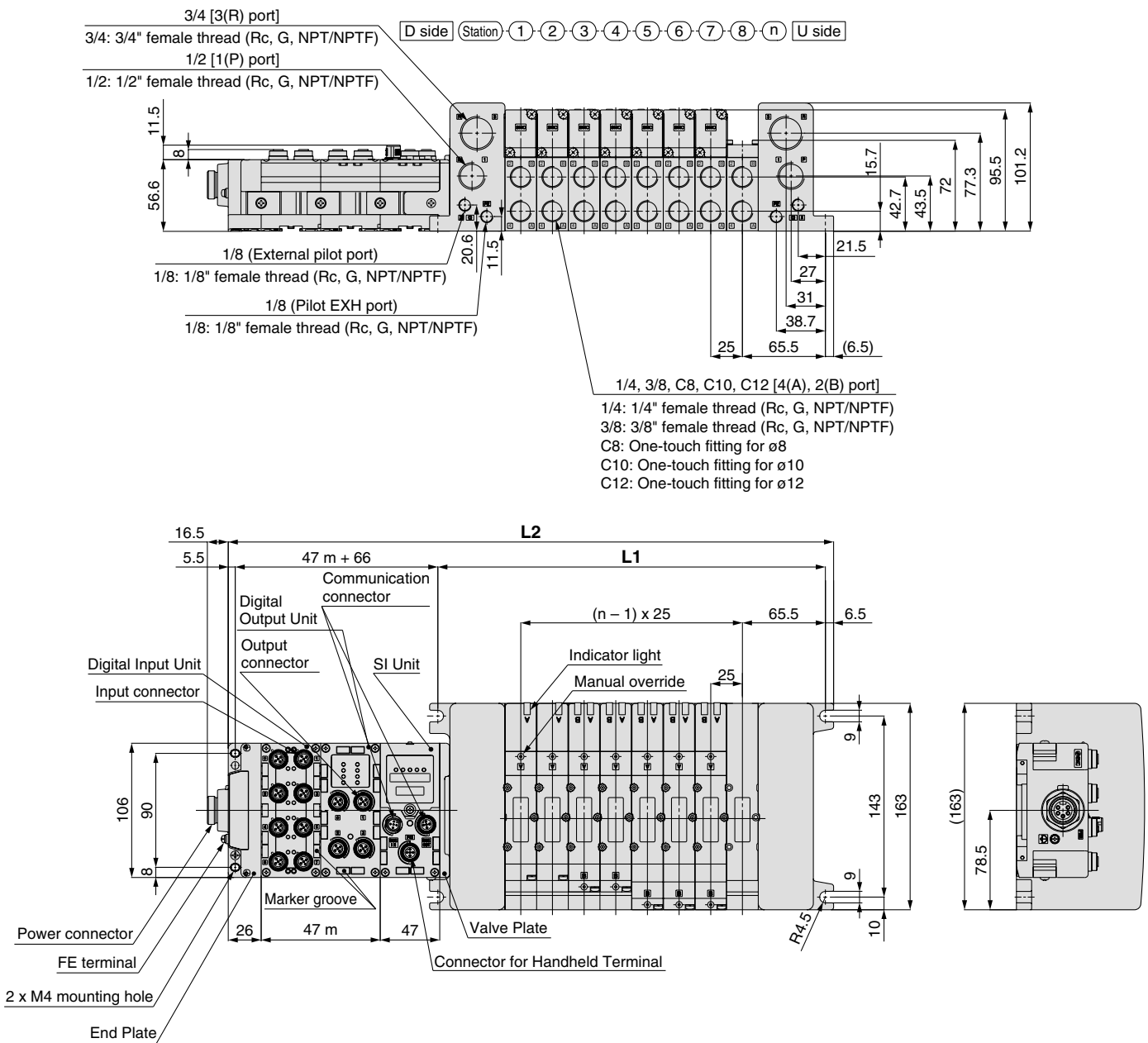
Dimensions

n: Stations (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	209	234	259	284	309	334	359	384	409	434	459	484	509	534	559	584

Dimensions

Power supply with 7/8 inch connector



Formulas

$L1 = 25n + 106$

$L2 = 25n + 184$

* L2 is the dimension without I/O unit. Add 47 mm for each additional I/O unit.

* "m" is number of I/O unit.

Dimensions

n: Stations (Maximum 16 stations)

n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	209	234	259	284	309	334	359	384	409	434	459	484	509	534	559	584

Fieldbus System

Series EX600

How to Order



SI Unit



EX600-SDN□

EX600-SMJ□

EX600-SPR□

EX600-S DN 1

SI Unit

SI Unit COM.

Fieldbus protocol

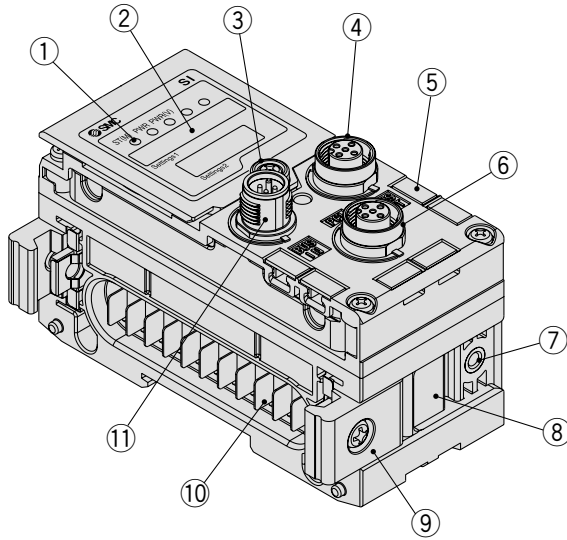
DN	DeviceNet™
MJ	CC-Link
PR	PROFIBUS DP

1	PNP (-COM.)
2	NPN (+COM.)

Specifications

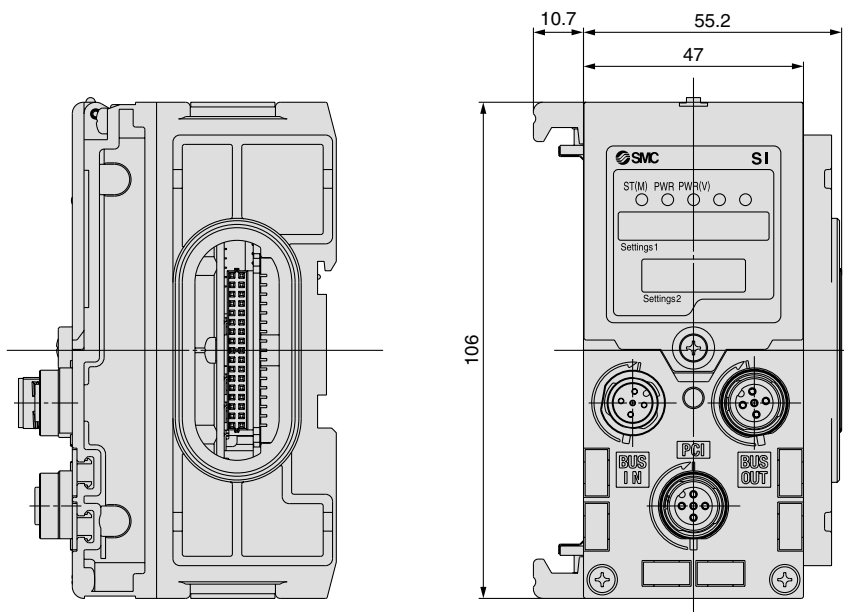
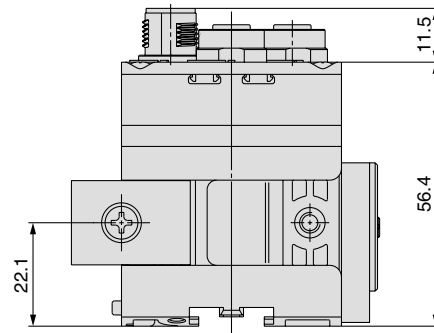
Model		EX600-SDN1	EX600-SDN2	EX600-SMJ1	EX600-SMJ2	EX600-SPR1	EX600-SPR2
Communication	Protocol	DeviceNet™ Volume 1 (Edition 2.1) Volume 3 (Edition 1.1)		CC-Link (Ver. 1.10, Ver. 2.00)		PROFIBUS DP (DP-V0)	
	Device type	Group 2 Only Server		Remote Device Station		DP Slave	
	Communication speed	125/250/500 kbps		156/625 kbps 2.5/5/10 Mbps		9.6/19.2/45.45/93.75/ 187.5/500 kbps 1.5/3/6/12 Mbps	
	Configuration file	EDS file		—		GSD file	
	I/O occupation area (Inputs/Outputs)	Max. (512 inputs/512 outputs)		Max. (512 inputs/512 outputs) 1/2/3/4 stations		Max. (512 inputs/512 outputs)	
Terminator		—		—		Internally implemented	
DeviceNet™ power supply		11 to 25 VDC		—		—	
Internal current consumption (Power supply for Control and Input)		55 mA or less		75 mA or less		80 mA or less	
Valve output	Output type	PNP	NPN	PNP	NPN	PNP	NPN
	Number of outputs	32 outputs (8/16/24/32 outputs selectable)					
	Load	Solenoid valve with light/surge voltage suppressor 24 VDC, 1.5 W or less (SMC)					
	Fail safe	HOLD/CLEAR					
	Protection	Short-circuit protection					
Environmental resistance	Enclosure	IP67 (Manifold assembly)					
	Operating temperature range	-10 to 50°C					
	Operating humidity range	35 to 85% RH (No dew condensation)					
	Withstand voltage	500 VAC for 1 minute between external terminals and FE					
	Insulation resistance	500 VDC, 10 MΩ or more between external terminals and FE					
	Vibration resistance	10 to 57 Hz with constant amplitude of 0.75 mm p-p 57 to 150 Hz with constant acceleration of 49 m/s ² for 2 hours in each direction of X, Y and Z direction (During de-energizing)					
Impact resistance	147 m/s ² 3 times in each direction of X, Y and Z (During de-energizing)						
Standards		CE marking, UL (CSA) recognition					
Mass		300 g					

Parts Description



No.	Description
1	Status indication LED
2	Indication cover
3	Indication cover set screw
4	Connector (BUS OUT)
5	Marker groove
6	Connector (for Handheld Terminal)
7	Valve plate mounting holes
8	Valve plate mounting groove
9	Joint bracket
10	Connector for unit (Plug)
11	Connector (BUS IN)

Dimensions



Digital Input Unit



EX600 - DX □ □

Digital Input Unit

Input type

P	PNP
N	NPN

Connector, number of inputs, and open circuit detection

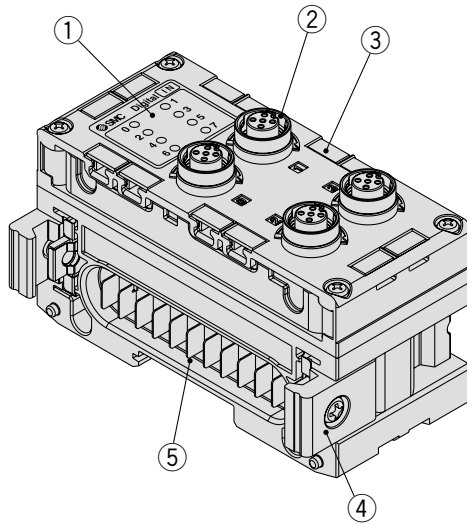
Symbol	Connector	Number of inputs	Open circuit detection
B	4 x M12 (5 pins)	8 inputs	No
C	8 x M8 (3 pins)	8 inputs	No
C1	8 x M8 (3 pins)	8 inputs	Yes
D	8 x M12 (5 pins)	16 inputs	No

Specifications

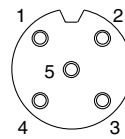
Model		EX600-DXPB	EX600-DXNB	EX600-DXPC□	EX600-DXNC□	EX600-DXPD	EX600-DXND
Input specifications	Input type	PNP	NPN	PNP	NPN	PNP	NPN
	Input connector	M12 (5 pins) ^{Note 1)}		M8 (3 pins)		M12 (5 pins) ^{Note 1)}	
	Number of inputs	8 inputs (2 inputs/connector)		8 inputs (1 input/connector)		16 inputs (2 inputs/connector)	
	Sensor supplied voltage	24 VDC (Supplied from power supply for control and input)					
	Maximum sensor supplied voltage	0.5 A/connector 2 A/unit		0.25 A/connector 2 A/unit		0.5 A/connector 2 A/unit	
	Protection	Short-circuit protection					
	Input resistance	2.7 kΩ					
	Rated input current	9 mA or less					
	ON voltage/ON current	17 V or more / 5 mA or more (At NPN input, between the pin for input terminal and for sensor supplied voltage of +24 V) (At PNP input, between the pin for input terminal and for sensor supplied voltage of 0 V)					
	OFF voltage/OFF current	5 V or less / 1 mA or less (At NPN input, between the pin for input terminal and for sensor supplied voltage of +24 V) (At PNP input, between the pin for input terminal and for sensor supplied voltage of 0 V)					
Open circuit detection current ^{Note 2)}	2 wires	—		0.5 mA or less/input ^{Note 2)}		—	
	3 wires	—		0.5 mA or less/connector ^{Note 2)}		—	
Current consumption	50 mA or less		55 mA or less		70 mA or less		
Indicator	Green LED on (When input is ON.) Red LED on (When short circuit is detected at sensor's power supply.) Red LED flashing (ON/OFF counter is exceeded, or open circuit is detected. ^{Note 2)})						
Environmental resistance	Enclosure	IP67 (Manifold assembly)					
	Operating temperature range	-10 to 50°C					
	Operating humidity range	35 to 85% RH (No dew condensation)					
	Withstand voltage	500 VAC for 1 minute between external terminals and FE					
	Insulation resistance	500 VDC, 10 MΩ or more between external terminals and FE					
	Vibration resistance	10 to 57 Hz with constant amplitude of 0.75 mm p-p 57 to 150 Hz with constant acceleration of 49 m/s ² for 2 hours in each direction of X, Y and Z direction (During de-energizing)					
Impact resistance	147 m/s ² 3 times in each direction of X, Y and Z (During de-energizing)						
Standards	CE marking, UL (CSA) recognition						
Mass	300 g		275 g		340 g		

Note 1) M12 (4 pin) connector can be connected.

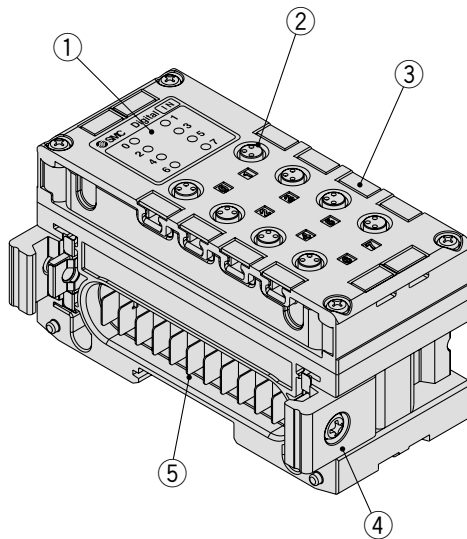
Note 2) Applicable only for unit with open circuit detection function.

Parts Description
EX600-DX□B


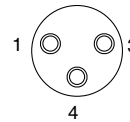
No.	Description
1	Status indication LED
2	Connector (Input)
3	Marker groove
4	Joint bracket
5	Connector for unit (Plug)

Connector (Input) Pin Assignment


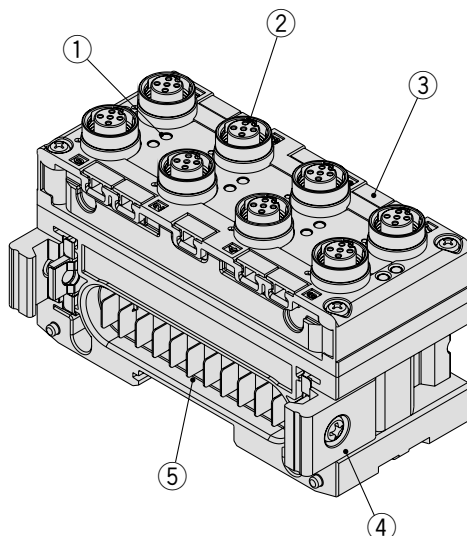
Pin No.	Signal name
1	24 V (for control/input)
2	Input ②
3	0 V (for control/input)
4	Input ①
5	FE

EX600-DX□C□


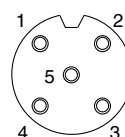
No.	Description
1	Status indication LED
2	Connector (Input)
3	Marker groove
4	Joint bracket
5	Connector for unit (Plug)

Connector (Input) Pin Assignment


Pin No.	Signal name
1	24 V (for control/input)
3	0 V (for control/input)
4	Input

EX600-DX□D


No.	Description
1	Status indication LED
2	Connector (Input)
3	Marker groove
4	Joint bracket
5	Connector for unit (Plug)

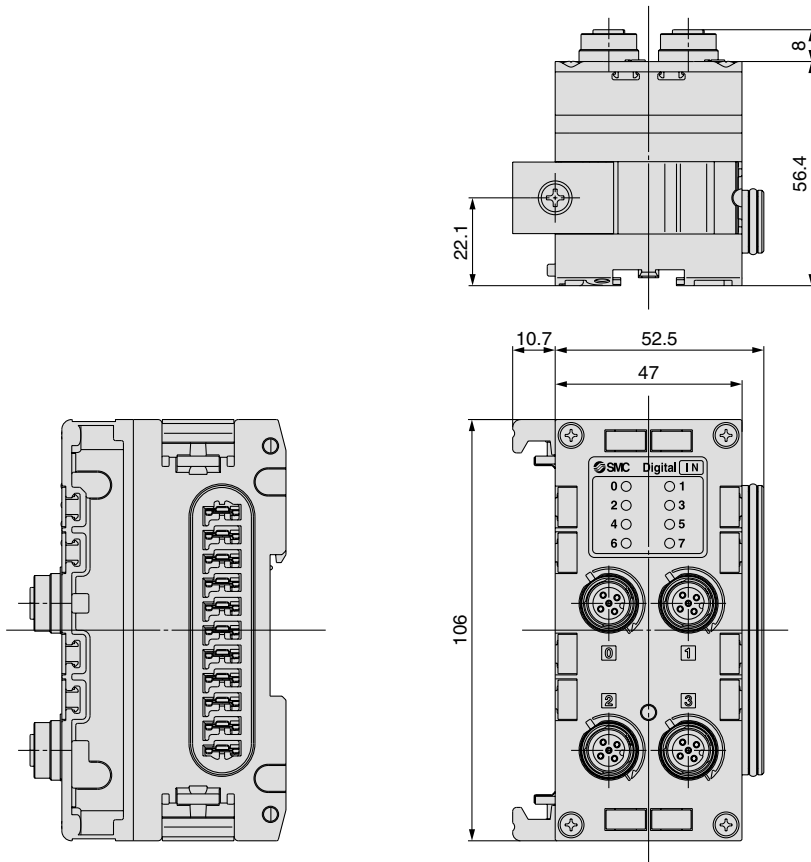
Connector (Input) Pin Assignment


Pin No.	Signal name
1	24 V (for control/input)
2	Input ②
3	0 V (for control/input)
4	Input ①
5	FE

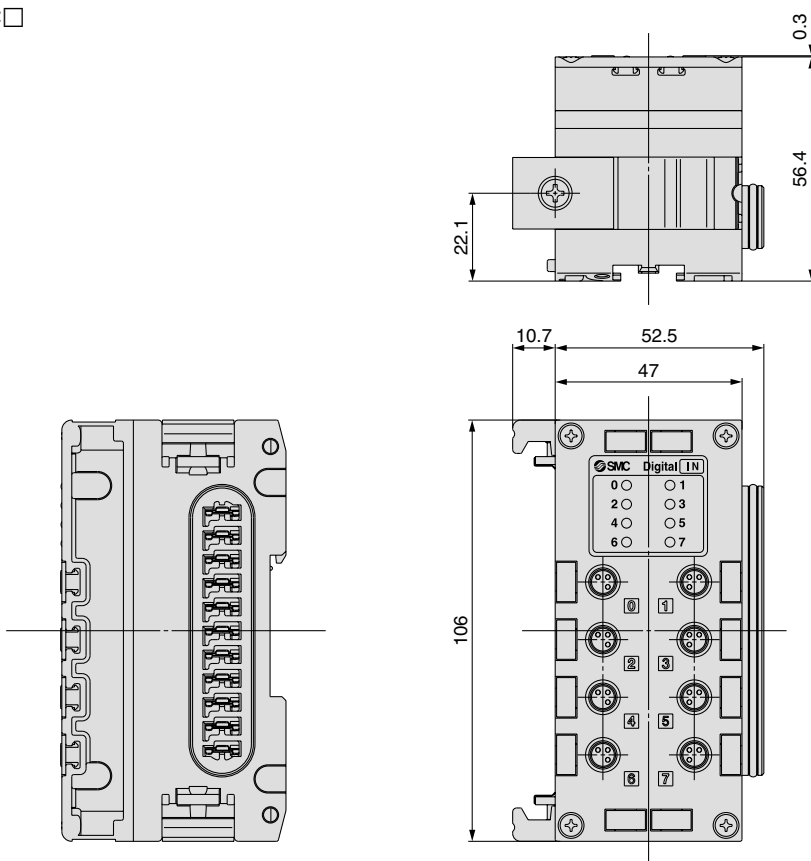
Series EX600

Dimensions

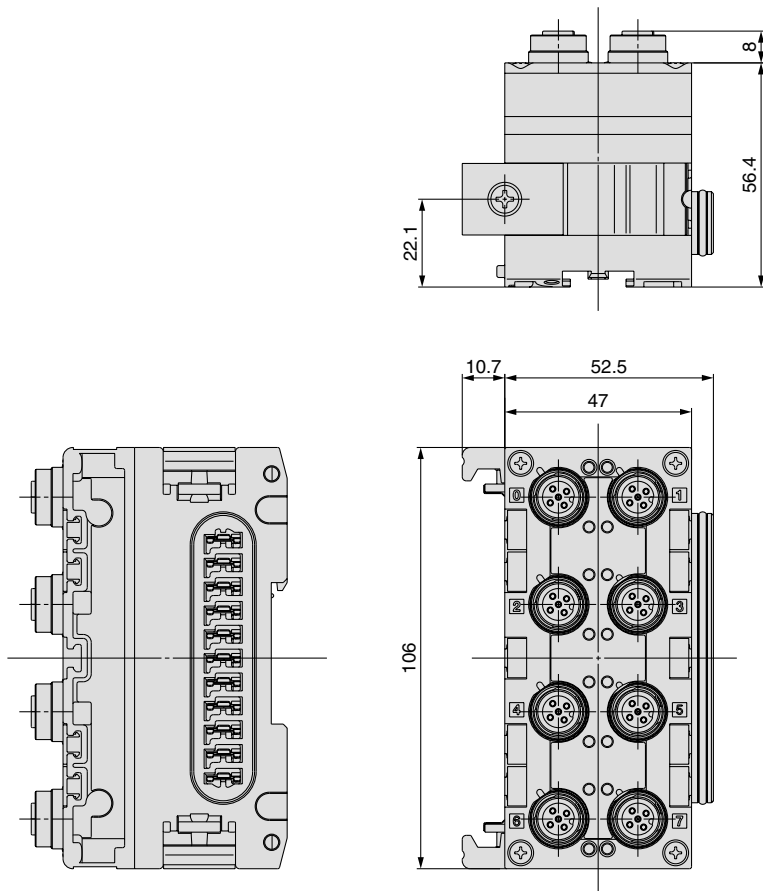
EX600-DX□B



EX600-DX□C□



EX600-DX□□D



Digital Output Unit



EX600 – DY **P** **B**

Digital Output Unit

• Connector and number of outputs

Symbol	Connector	Number of outputs
B	4 x M12 (5 pins)	8 outputs

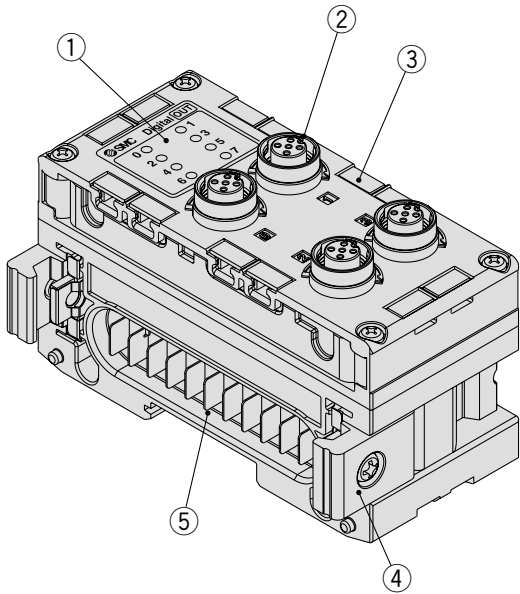
• Output type

P	PNP
N	NPN

Specifications

Model		EX600-DYPB	EX600-DYNB
Output specifications	Output type	PNP	NPN
	Output connector	M12 (5 pins)	
	Number of outputs	8 outputs (2 outputs/connector)	
	Rated load voltage	24 VDC (Supplied from power supply for output)	
	Maximum load current	0.5 A/1 output, 2 A/unit	
	Protection	Short-circuit protection	
Current consumption		50 mA or less	
Indicator		Green LED on (When output is ON.) Red LED on (When short circuit is detected at load.) Red LED flashing (Open circuit is detected, or ON/OFF counter is exceeded.)	
Environmental resistance	Enclosure	IP67 (Manifold assembly)	
	Operating temperature range	-10 to 50°C	
	Operating humidity range	35 to 85% RH (No dew condensation)	
	Withstand voltage	500 VAC for 1 minute between external terminals and FE	
	Insulation resistance	500 VDC, 10 MΩ or more between external terminals and FE	
	Vibration resistance	10 to 57 Hz with constant amplitude of 0.75 mm p-p 57 to 150 Hz with constant acceleration of 49 m/s ² for 2 hours in each direction of X, Y and Z direction (During de-energizing)	
Impact resistance		147 m/s ² 3 times in each direction of X, Y and Z (During de-energizing)	
Standards		CE marking, UL (CSA) recognition	
Mass		300 g	

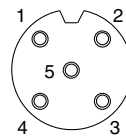
Parts Description



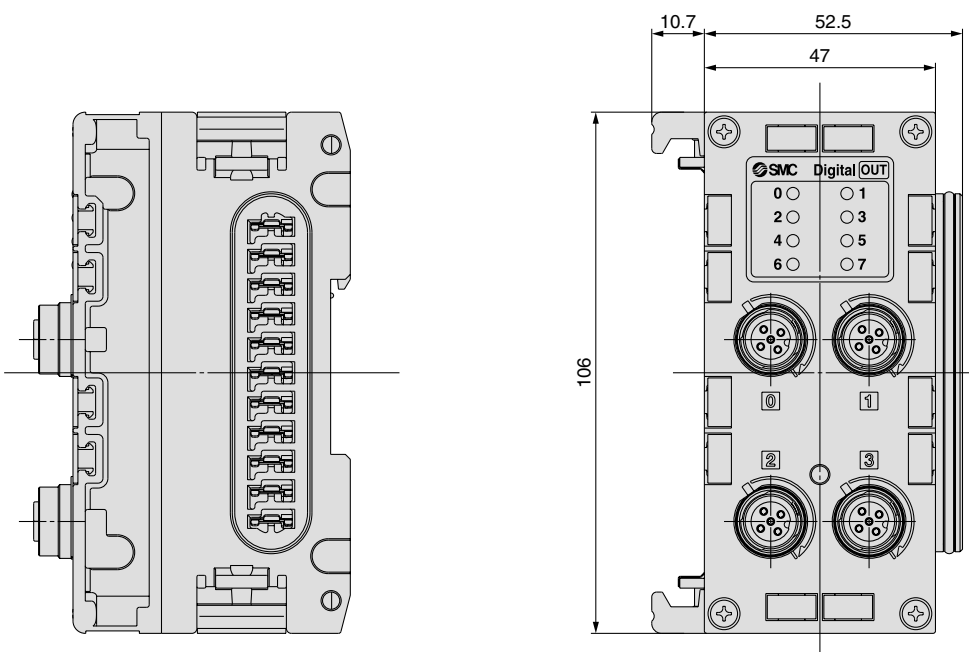
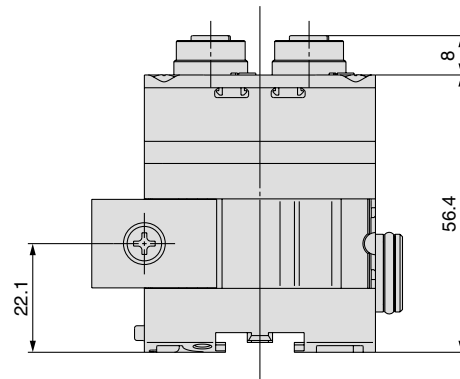
No.	Description
1	Status indication LED
2	Connector (Output)
3	Marker groove
4	Joint bracket
5	Connector for unit (Plug)

Connector (Output) Pin Assignment

Pin No.	Signal name	
	EX600-DYPB	EX600-DYNB
1	NC	24 V (for output)
2	Output ②	Output ②
3	0 V (for output)	NC
4	Output ①	Output ①
5	FE	FE



Dimensions



Analogue Input Unit



EX600 – AX A

Analogue Input Unit

Connector and input channel

Symbol	Connector	Input channel
A	2 x M12 (5 pins)	2 channels

Specifications

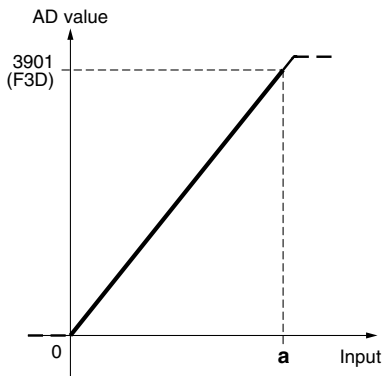
Model		EX600-AXA		
Input specifications	Input type	Voltage input	Current input	
	Input connector	M12 (5 pins)		
	Input channel	2 channels (1 channel/connector) <small>Note)</small>		
	Sensor supplied voltage	24 VDC (Supplied from power supply for control and input)		
	Maximum sensor supplied voltage	0.5 A/channel		
	Protection	Short-circuit protection		
	Input signal range	12 bit resolution	0 to 10 V 1 to 5 V 0 to 5 V	0 to 20 mA 4 to 20 mA
		16 bit resolution	-10 to 10 V (Factory default setting) -5 to 5 V	-20 to 20 mA
	Maximum input signal	±15 V	±40 mA	
	Input impedance	100 kΩ	50 Ω	
	Linearity	±0.05% F.S. or less		
	Repeatability	±0.15% F.S. or less		
	Absolute accuracy	±0.5% F.S. or less	±0.6% F.S. or less	
Current consumption	70 mA or less			
Indicator	Green LED on (When input is ON.) Red LED on (When short circuit is detected at sensor's power supply.) Red LED flashing (Analogue input exceeds measurement range or user setting range.)			
Environmental resistance	Enclosure	IP67 (Manifold assembly)		
	Operating temperature range	-10 to 50°C		
	Operating humidity range	35 to 85% RH (No dew condensation)		
	Withstand voltage	500 VAC for 1 minute between external terminals and FE		
	Insulation resistance	500 VDC, 10 MΩ or more between external terminals and FE		
	Vibration resistance	10 to 57 Hz with constant amplitude of 0.75 mm p-p 57 to 150 Hz with constant acceleration of 49 m/s ² for 2 hours in each direction of X, Y and Z direction (During de-energizing)		
Impact resistance	147 m/s ² 3 times in each direction of X, Y and Z (During de-energizing)			
Standards	CE marking, UL (CSA) recognition			
Mass	290 g			

Note) 32 channels are occupied per one unit.

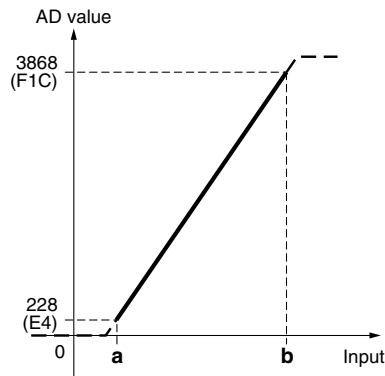
Considering influence of noise, etc. from outside source to the Analogue Input Unit, when connecting a sensor that has ground connected at one end (SMC sensor uses this method), please connect sensor's ground line to unit connector's Input (-) terminal.

Analogue Characteristics

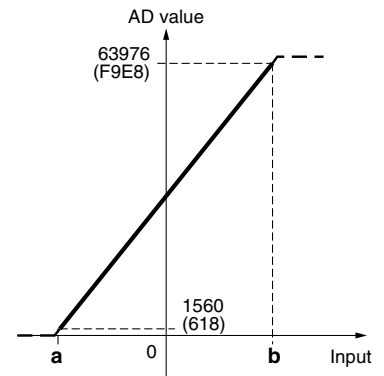
Offset Binary Data Format



Input signal range	a
0 to 10 V	10 V
0 to 5 V	5 V
0 to 20 mA	20 mA



Input signal range	a	b
1 to 5 V	1 V	5 V
4 to 20 mA	4 mA	20 mA

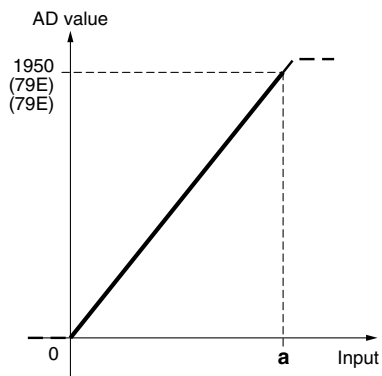


Input signal range	a	b
-10 to 10 V	-10 V	10 V
-5 to 5 V	-5 V	5 V
-20 to 20 mA	-20 mA	20 mA

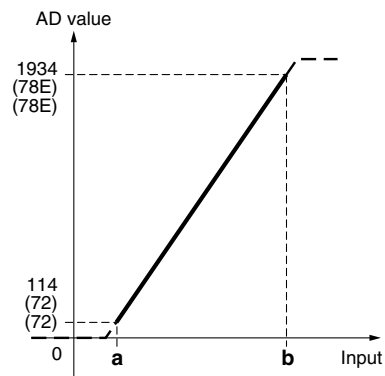
Regarding AD value

In the above graph, 2 AD values are explained as below.
 3901 : AD value [Decimal value]
 (F3D): Offset Binary type [Hexadecimal value]

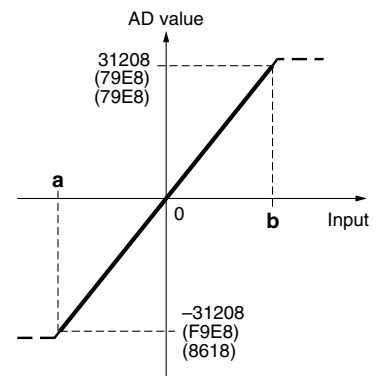
Signed Binary & 2's Complements Data Format



Input signal range	a
0 to 10 V	10 V
0 to 5 V	5 V
0 to 20 mA	20 mA



Input signal range	a	b
1 to 5 V	1 V	5 V
4 to 20 mA	4 mA	20 mA

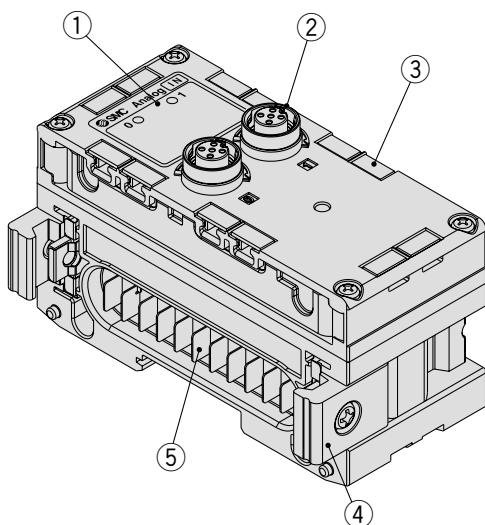


Input signal range	a	b
-10 to 10 V	-10 V	10 V
-5 to 5 V	-5 V	5 V
-20 to 20 mA	-20 mA	20 mA

Regarding AD value

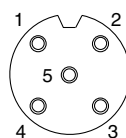
In the above graph, 3 AD values are explained as below.
 -31208 : AD value [Decimal value]
 (F9E8): Signed Binary type [Hexadecimal value]
 (8618) : 2's complements [Hexadecimal value]

Parts Description



No.	Description
1	Status indication LED
2	Connector (Analog input)
3	Marker groove
4	Joint bracket
5	Connector for unit (Plug)

Connector (Analog Input) Pin Assignment

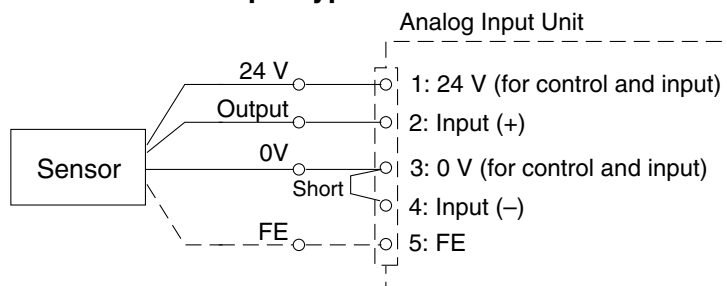


Pin No.	Signal name
1	24 V (for control/input)
2	Input +
3	0 V (for control/input)
4	Input -
5	FE

When connecting analogue input device, wiring method differs depending on which type of sensor is used. Refer to below diagram for wiring method example.

Especially when connecting [3-wire output type sensor] and [2-wire current output type sensor], short the pin no 3 and the pin no 4. Otherwise, it will not be correctly detected.

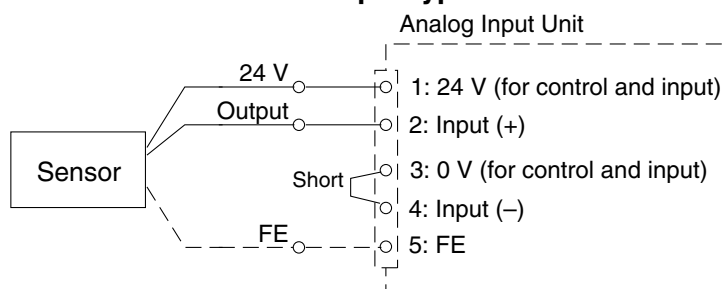
● When 3-wire output type sensor is used



Compatible SMC Products

- Pressure sensor: Series PSE53□
 Series PSE54□
 Series PSE550
 Series PSE56□
 Flow sensor: Series PFM5□
 Series PFMV5□
 Series PF2A5□
 Series PF2D5□
 Series PF2W5□

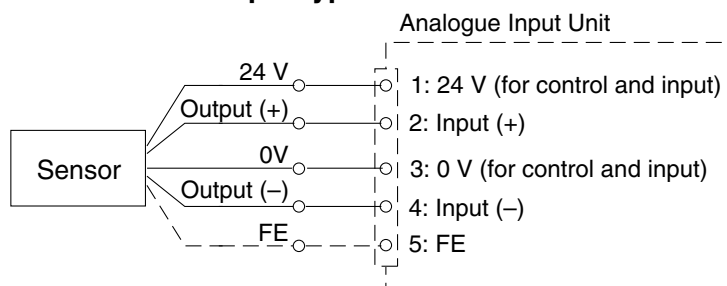
● When 2-wire current output type sensor is used



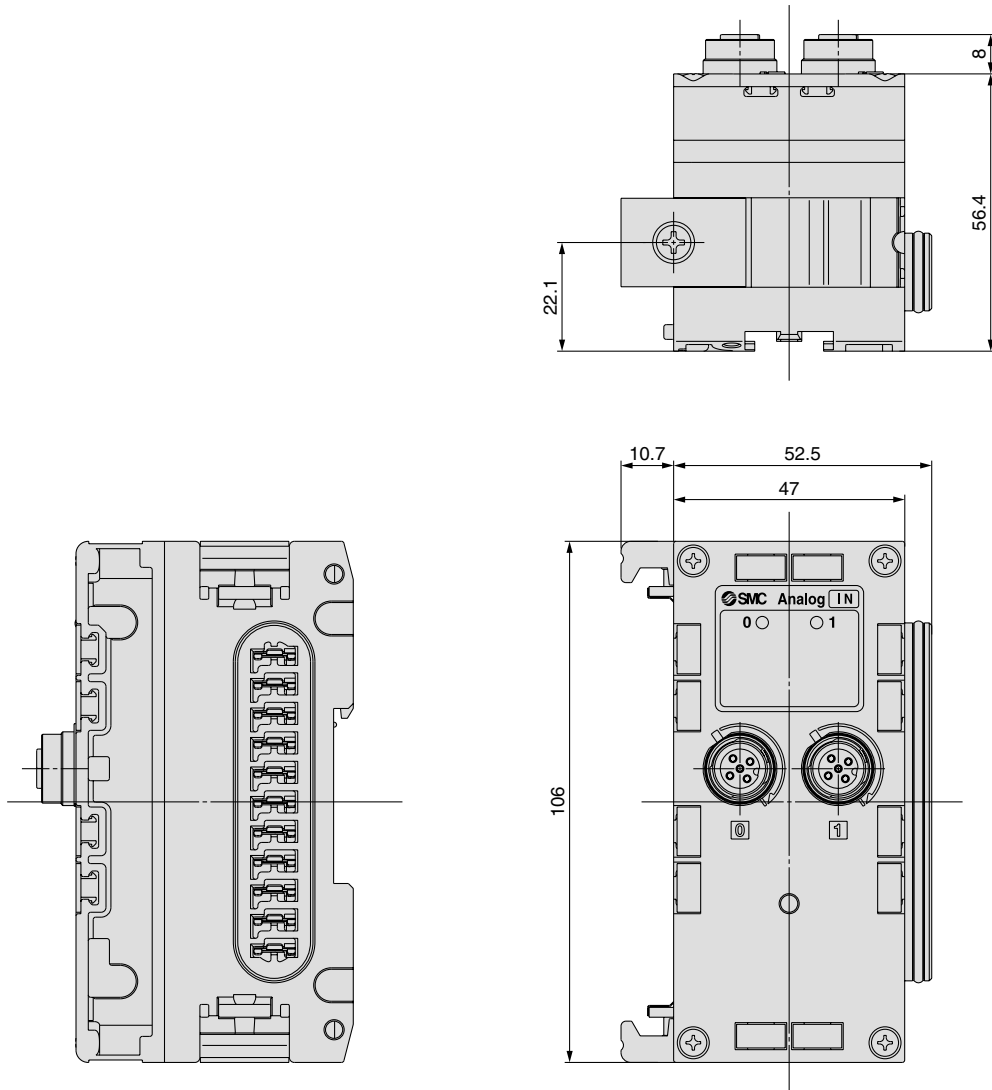
Compatible SMC Products

- Pressure sensor: Series PSE550-28
 Series PSE56□-□-28

● When 4-wire output type sensor is used



Dimensions



End Plate



EX600-ED2

EX600-ED3

EX600-ED3-2

End Plate on D side

Connector

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

Mounting method

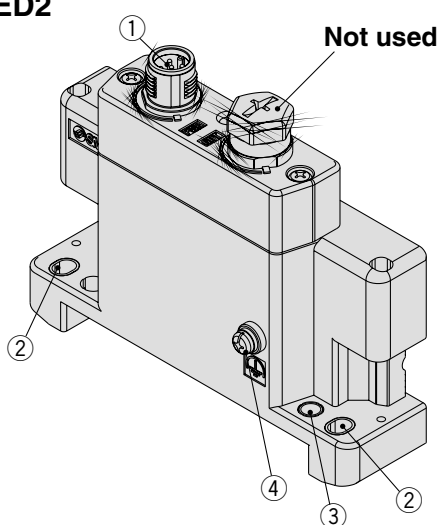
Nil	No DIN rail mounting plate
2	With DIN rail mounting plate for manifold solenoid valve

Specifications

Model	EX600-ED2	EX600-ED3
Input specifications		
Power connector	M12 (5 pins) plug	7/8 inch (5 pins) plug
Power supply for control/input	24 VDC $\pm 10\%$ Max. supply current 2 A	24 VDC $\pm 10\%$ Max. supply current 8 A
Power supply for output	24 VDC $+10\%/-5\%$ Max. supply current 2 A	24 VDC $+10\%/-5\%$ Max. supply current 8 A
Environmental resistance	IP67 (Manifold assembly)	
Operating temperature range	-10 to 50°C	
Operating humidity range	35 to 85% RH (No dew condensation)	
Withstand voltage	500 VAC for 1 minute between external terminals and FE	
Insulation resistance	500 VDC, 10 M Ω or more between external terminals and FE	
Vibration resistance	10 to 57 Hz with constant amplitude of 0.75 mm p-p 57 to 150 Hz with constant acceleration of 49 m/s ² for 2 hours in each direction of X, Y and Z direction (During de-energizing)	
Impact resistance	147 m/s ² 3 times in each direction of X, Y and Z (During de-energizing)	
Standards	CE marking, UL (CSA) recognition	
Mass	170 g	175 g

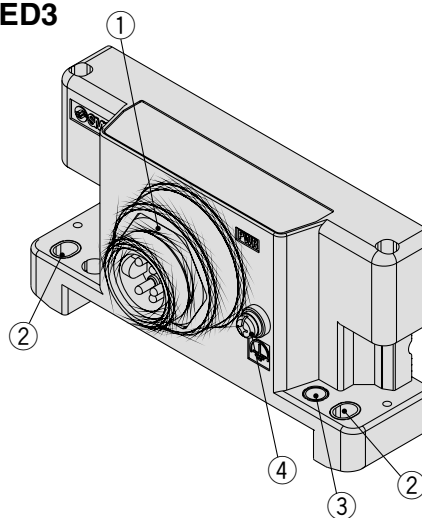
Parts Description

EX600-ED2



No.	Description
1	Power connector
2	Fixing hole for direct mounting
3	DIN rail fixing hole
4	FE terminal

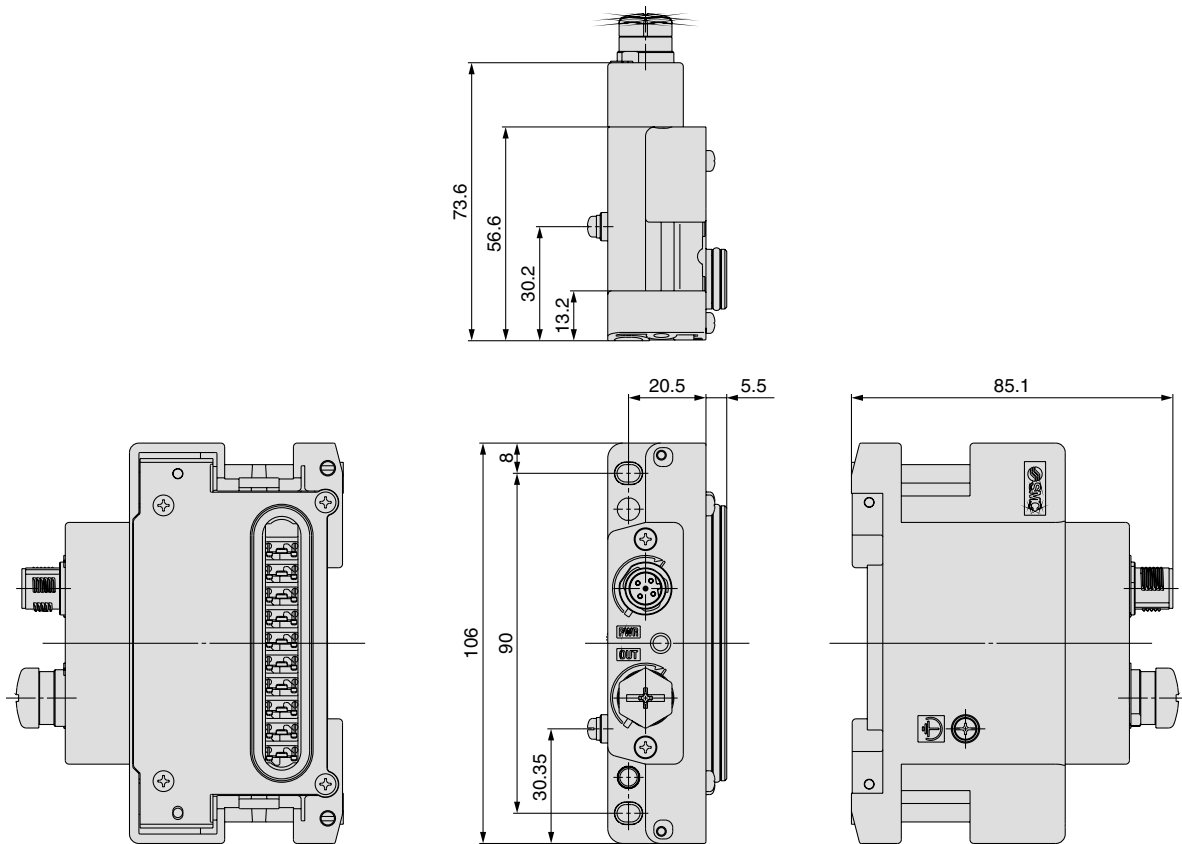
EX600-ED3



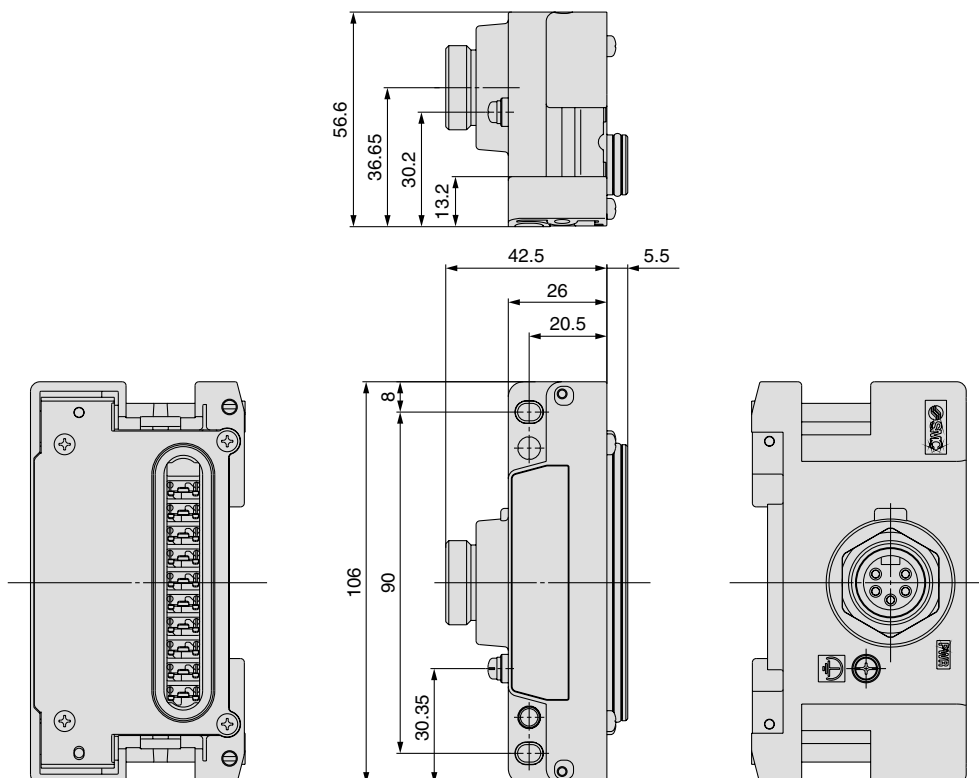
No.	Description
1	Power connector
2	Fixing hole for direct mounting
3	DIN rail fixing hole
4	FE terminal

Dimensions

EX600-ED2



EX600-ED3



How to Order

Handheld Terminal



EX600-HT1-1

Handheld Terminal

Cable length for Handheld Terminal

Nil	No cable
1	1 m
3	3 m

Option

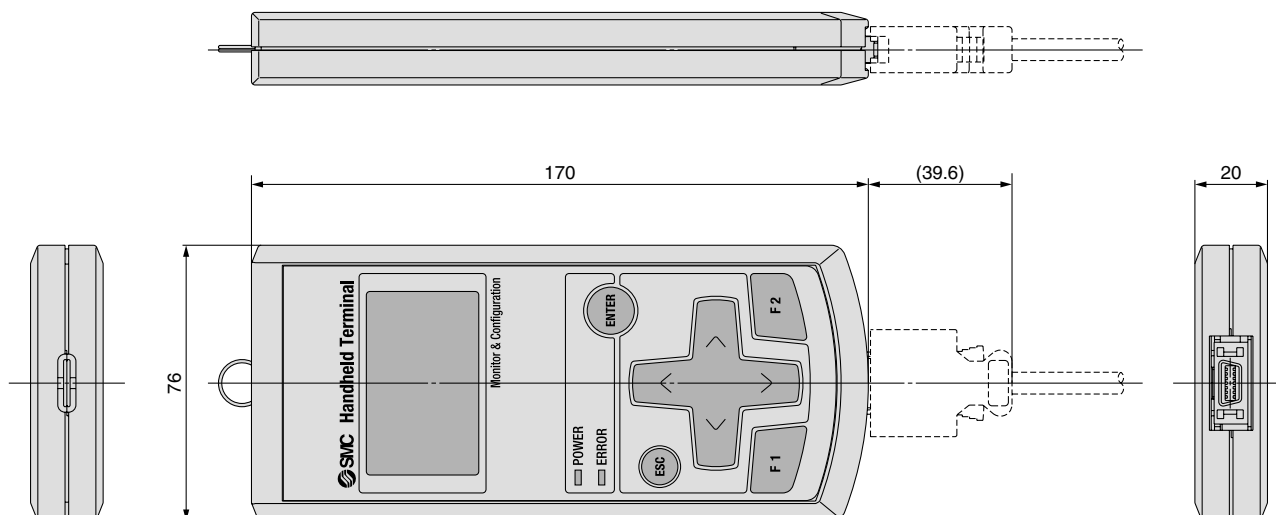
When option item is needed separately, please order using below part number.

Description	Model
Handheld Terminal cable 1 m	EX600-AC010-1
Handheld Terminal cable 3 m	EX600-AC030-1

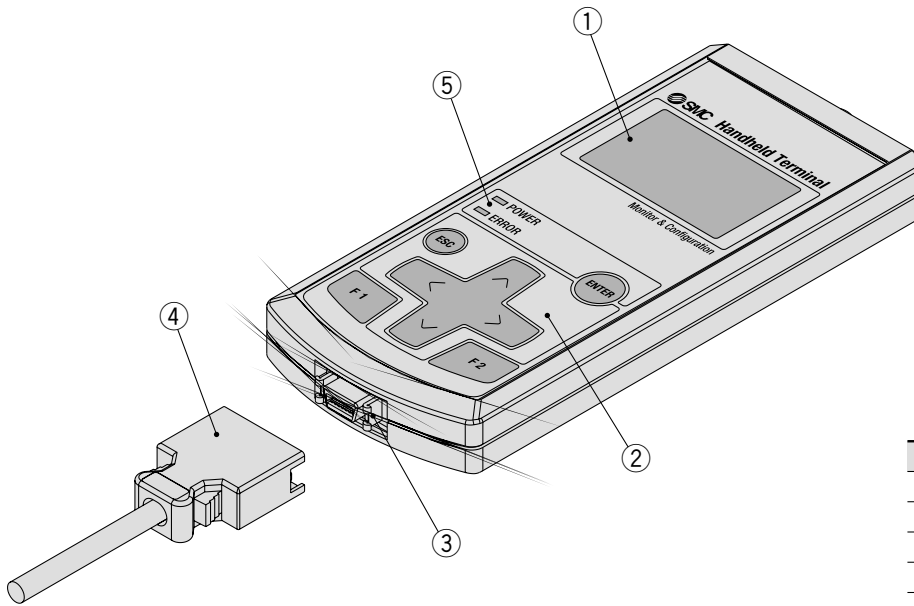
Specifications

Model	EX600-HT1	
Communication method	RS232C	
Baud rate	9600 bps	
Power supply	Power supplied from SI Unit connector (24 VDC)	
Current consumption	50 mA or less	
Display	LCD with backlight	
Resolution	128 x 64 dots	
Connector	14-pin connector	
Environmental resistance	Protective structure	IP20
	Operating temperature	-10 to 50°C
	Operating humidity	35 to 85% RH (No dew condensation)
	Withstand voltage	500 VAC for 1 minute between external terminals and frame
	Insulation resistance	500 VDC, 10 MΩ or more between external terminals and frame
	Vibration resistance	10 to 57 Hz: Constant amplitude 0.75 mm p-p 57 to 150 Hz: Constant acceleration 49 m/s ² for 2 hours in each direction (During de-energising)
Impact resistance	300 m/s ² 3 times for each X, Y, Z direction (During de-energising)	
Standard	CE marking	
Mass	160 g	

Dimensions

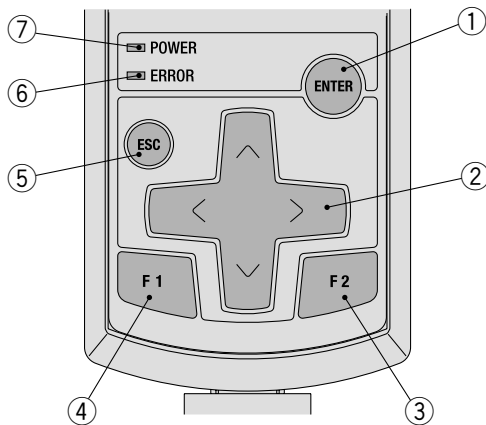


Parts Description



No.	Description
1	LCD display
2	Operation button
3	Connector
4	Handheld Terminal cable
5	Status display LED

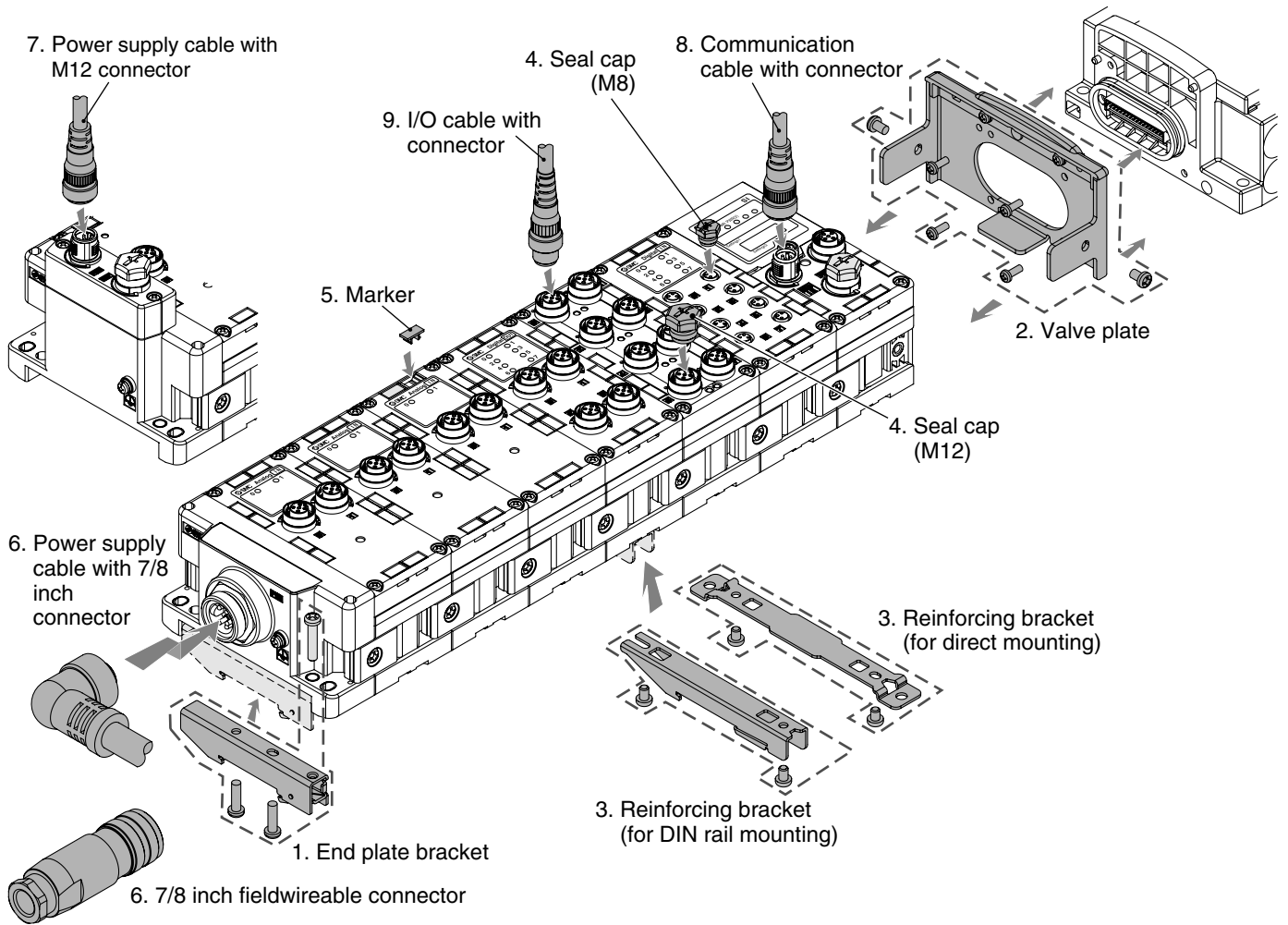
Operation Button and LED Details



No.	Description
1	ENTER button
2	Cursor button
3	F2 button
4	F1 button
5	Escape button
6	ERROR status LED
7	POWER status LED

Series EX600

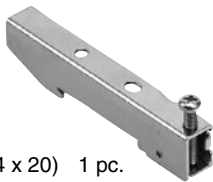
Accessories



1. End plate bracket

This bracket is used for the end plate of DIN rail mounting.

EX600-ZMA2

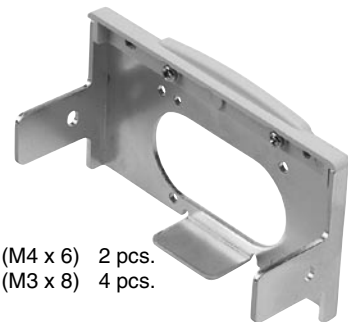


Enclosed parts

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

2. Valve plate

EX600-ZMV1



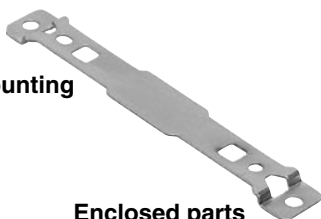
Enclosed parts

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

3. Reinforcing bracket

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

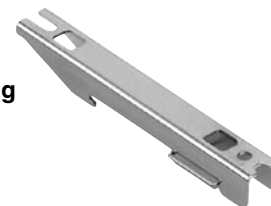
For direct mounting
EX600-ZMB1



Enclosed parts

Round head screw (M4 x 5) 2 pcs.

For DIN rail mounting
EX600-ZMB2



Enclosed parts

Round head screw (M4 x 6) 2 pcs.

4. Seal cap (10 pcs.)

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

EX9-AWES
For M8



EX9-AWTS
For M12



6. 7/8 inch connector and its related parts

• Power supply cable with 7/8 inch connector

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



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

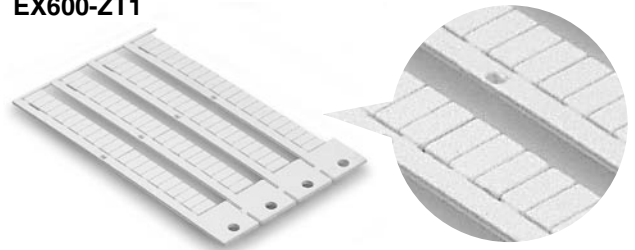
PCA-1558797	Plug
PCA-1558807	Socket



5. Marker (1 sheet, 88 pcs.)

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

EX600-ZT1



■ SPEEDCON and its related parts

7. Power supply cable with M12 connector (5 pins B-coded)

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



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

8. Communication cable with connector / Communication connector

The communication cable with connector and communication connector available to this series are found in page 43 through to 46.

9. I/O cable with connector / I/O connector

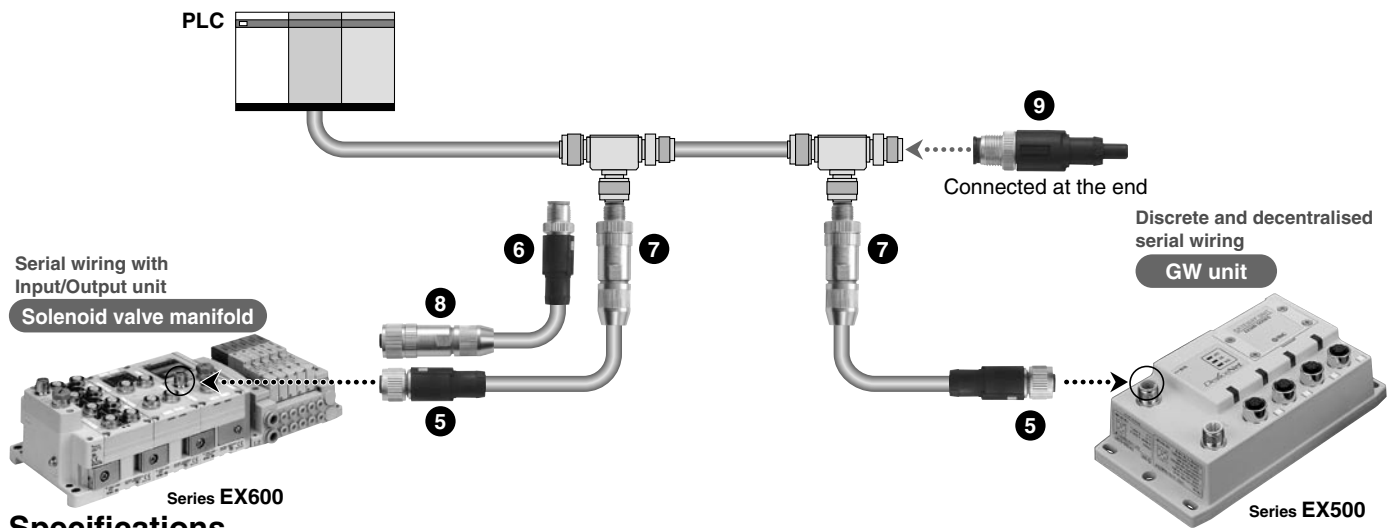
The I/O cable with connector and I/O connector available to this series are found in page 47 through to 49.

Communication Cable/Connector

M12



Example of Connection



Specifications

Description		Communication cable (With one side connector)		Fieldwireable connector		Terminal plug	
Part no.		PCA-1557633	PCA-1557646	PCA-1557659	PCA-1557662	PCA-1557675	
Product image							
		Socket	Plug	Plug	Socket	For DeviceNet™ (Plug, A-coded)	
Number of functional poles		M12: 5 poles					
Key type		A-coded (Normal key)					
Pin assignment				DeviceNet™ 1: DRAIN 2: V+ (Red) 3: V- (Black) 4: CAN H (White) 5: CAN L (Blue)		1: DRAIN: NC 2: V+: NC 3: V-: NC 4: CAN H 5: CAN L	
Wiring specifications (Note)	Fixed cable length	5 m		—			
	Cable O.D.	6.70 ±0.3 mm		Applicable cable	4.0 to 8.0 mm		
	Wire gauge (Stranded wire cross section)	Power pair	0.33 mm ² /AWG22		0.14 to 0.5 mm ² /AWG26 to 20		
		Data pair	0.2 mm ² /AWG24	—			
	Wire outer diameter (Including insulating material)	Power pair	1.4 ±0.05 mm	—			
	Data pair	2.05 ±0.10 mm	—				
Connection type		—		Spring-cage connection		—	
Rating/Performance	Rated current	4 A		—			
	Rated voltage	48 V		—			
	Contact resistance	≤5 mΩ		—			
	Insulation resistance	≥100 MΩ		—			
	Withstand voltage	1.0 kV		—			
	Ambient temperature	Connector	Operating	-25 to 90°C	-40 to 85°C		-25 to 90°C
			Fixed	-20 to 75°C	—		—
		Cable	-40 to 80°C	—		—	
	Protection class	IP67 (Only with screw tightened)					—
	Allowable repeated insertion/withdrawal	200					—
Cable retaining force	150 N/15 sec.		—				
Vibration resistance	10 to 500 Hz/98 m/s ²						
Material	Material of knurl	Zinc for die casting		Brass		Zinc for die casting	
	Contact (Surface treatment)	CuSn (Au plating (Ni plating))					
	Insulating material	Thermoplastic polyurethane (TPU)		Polyamide (PA6.6)		Thermoplastic polyurethane (TPU)	
	Material of sheath	Polyurethane (PUR)		—			
Weight (Mass)	Approx. 308 g	Approx. 306 g	Approx. 47 g	Approx. 53 g	Approx. 12 g		

Note) The shaded parts show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

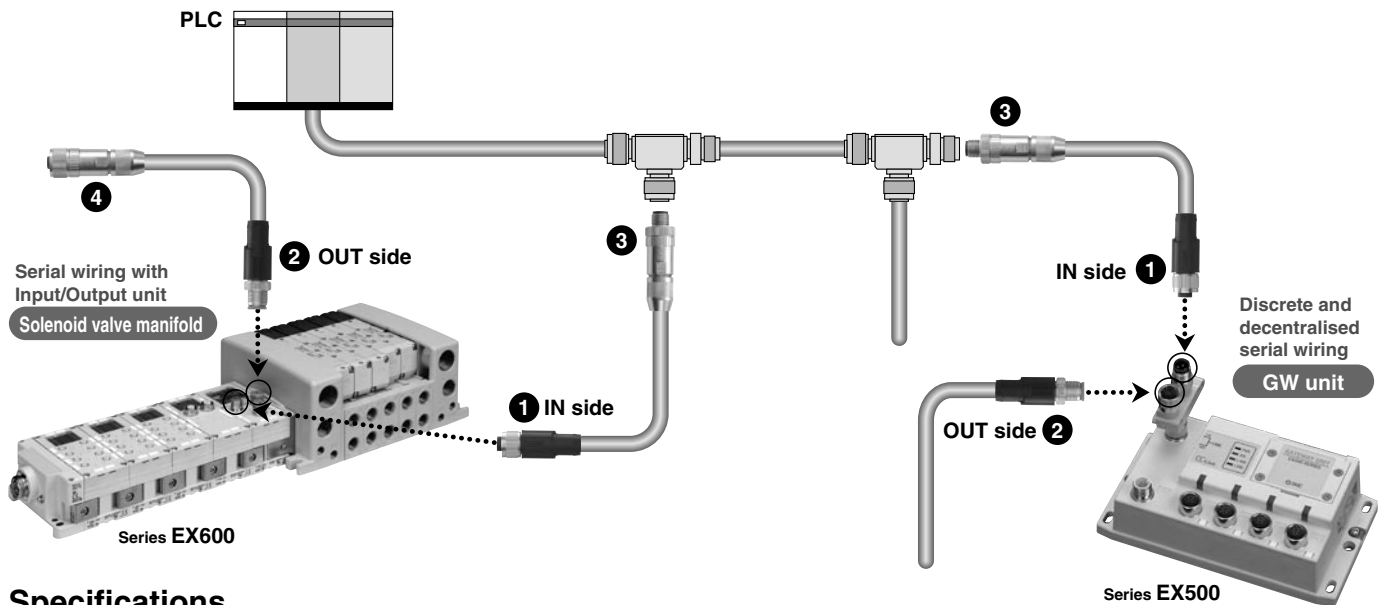
Communication Cable/Connector

M12



CC-Link

Example of Connection



Specifications

Description		Communication cable (With one side connector)		Fieldwireable connector			
Part no.		PCA-1567720	PCA-1567717	PCA-1557617	PCA-1557620		
Product image							
Number of functional poles		M12: 4 poles					
Key type		A-coded (Normal key)					
Pin assignment				1: SLD (Shield wire) 2: DB (White) 3: DG (Yellow) 4: DA (Blue)			
Wiring specifications (Note)	Fixed cable length	5 m		—			
	Cable O.D.	7.7 ±0.3 mm		Applicable cable	4.0 to 8.0 mm		
	Wire gauge (Stranded wire cross section)	0.5 mm ² /AWG20			0.14 to 0.5 mm ² /AWG26 to 20		
	Wire outer diameter (Including insulating material)	2.55 ±0.07 mm		—			
	Connection type	—		Spring-cage connection			
Rating/Performance	Rated current			4 A			
	Rated voltage	250 V		48 V			
	Contact resistance			≤5 mΩ			
	Insulation resistance			≥100 MΩ			
	Withstand voltage			1.4 kV			
	Ambient temperature	Connector	-25 to 90°C		-40 to 85°C		
		Cable	Operating	-20 to 60°C		—	
			Fixed	-20 to 60°C		—	
	Protection class	IP67 (Only with screw tightened)					
	Allowable repeated insertion/withdrawal	200					
Cable retaining force	150 N/15 sec.		—				
Vibration resistance			10 to 500 Hz/98 m/s ²				
Material	Material of knurl	Zinc for die casting		Brass			
	Contact (Surface treatment)	CuSn (Au plating (Ni plating))					
	Insulating material	Thermoplastic polyurethane (TPU)		Polyamide (PA6.6)			
	Material of sheath	Polyvinyl chloride (PVC)		—			
Weight (Mass)	Approx. 306 g	Approx. 308 g	Approx. 48 g	Approx. 53 g			

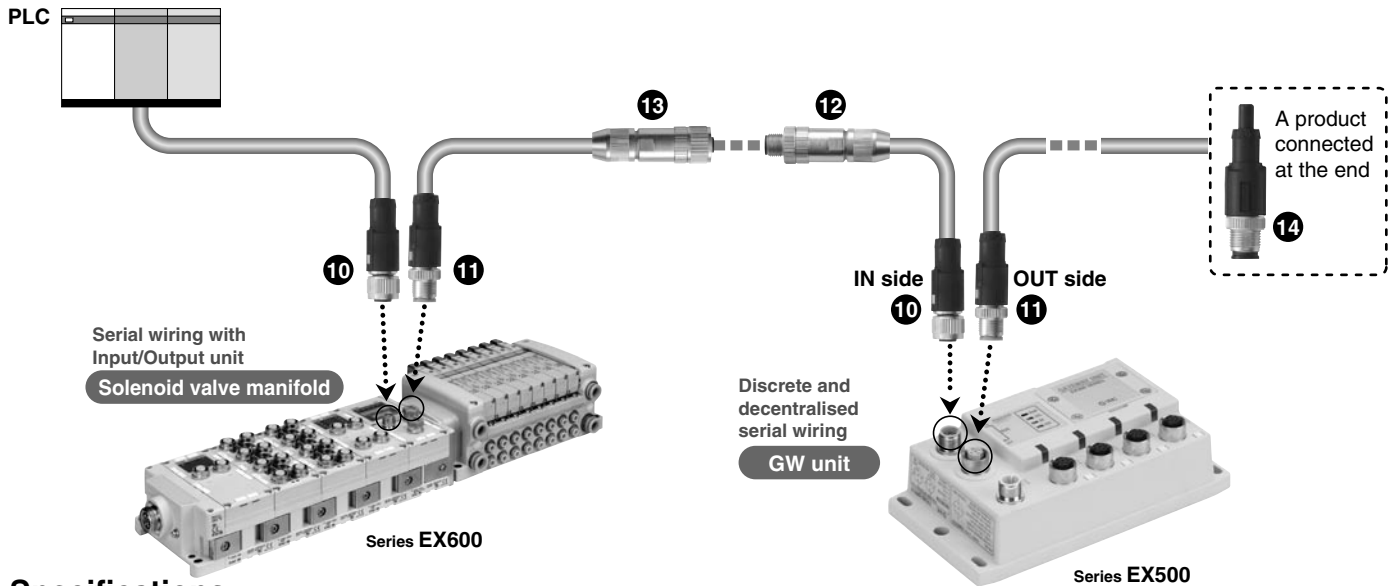
Note) The shaded parts show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

Communication Cable/Connector

M12



Example of Connection



Specifications

Description		Communication cable (With one side connector)		Fieldwireable connector		Terminal plug	
Part no.		PCA-1557688	PCA-1557691	PCA-1557701	PCA-1557714	PCA-1557727	
Product image							
		Socket	Plug	Plug	Socket	For PROFIBUS DP (Plug, B-coded)	
Number of functional poles		M12: 2 poles		M12: 3 poles		M12: 4 poles	
Key type		B-coded (Reverse key)					
Pin assignment				1: — 2: A Line (Green) 3: — 4: B Line (Red) 5: —		1: VP 4: B Line 2: A Line 3: DGND	
		Plug, B-coded (Viewed from the plug/socket side)					
Wiring specifications (Note)	Fixed cable length	5 m		—		—	
	Cable O.D.	7.80 ±0.2 mm		Applicable cable	4.0 to 8.0 mm		
	Wire gauge (Stranded wire cross section)	0.34 mm ² /AWG22			0.14 to 0.5 mm ² /AWG26 to 20		
	Wire outer diameter (Including insulating material)	2.55 ±0.07 mm		—		—	
Connection type	—		Spring-cage connection		—		
Rating/Performance	Rated current	4 A		—		—	
	Rated voltage	60 V		48 V		60 V	
	Contact resistance	—		≤5 mΩ		—	
	Insulation resistance	—		≥100 MΩ		—	
	Withstand voltage	—		1.4 kV		—	
	Ambient temperature	Connector	-25 to 90°C		-40 to 85°C		-25 to 90°C
		Cable	Operating	-20 to 80°C	—		—
		Fixed	-40 to 85°C		—		—
	Protection class	IP67 (Only with screw tightened)					
	Allowable repeated insertion/withdrawal	200					
Cable retaining force	150 N/15 sec.		—		—		
Vibration resistance	10 to 500 Hz/98m/s ²						
Material	Material of knurl	Zinc for die casting		Brass		Zinc for die casting	
	Contact (Surface treatment)	CuSn (Au plating (Ni plating))					
	Insulating material	Polyamide (PA6.6)				Thermoplastic polyurethane (TPU)	
	Material of sheath	Polyurethane (PUR)		—		—	
Weight (Mass)	Approx. 343 g	Approx. 356 g	Approx. 48 g	Approx. 54 g	Approx. 12 g		

Note) The shaded parts show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

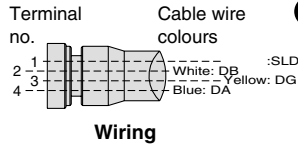
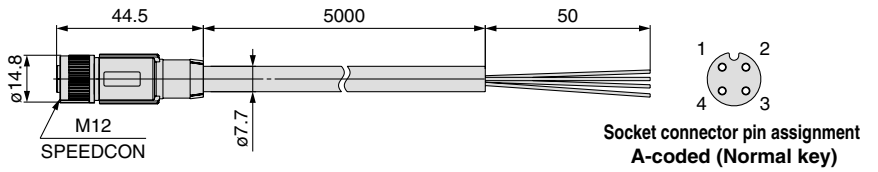
Communication Cable/Connector

Dimensions

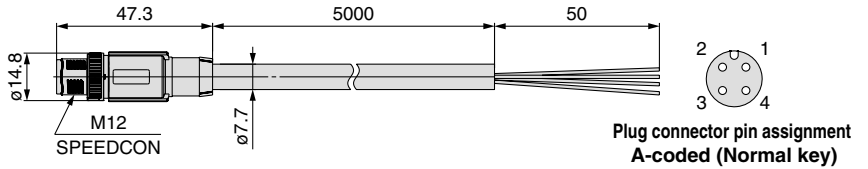
Communication cable (With one side connector)

CC-Link

- ① **PCA-1567720**
For CC-Link
(Socket)

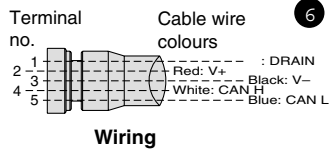
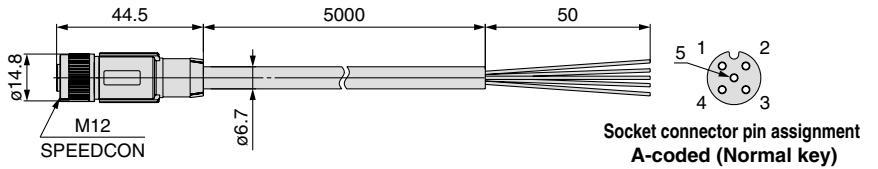


- ② **PCA-1567717**
For CC-Link
(Plug)

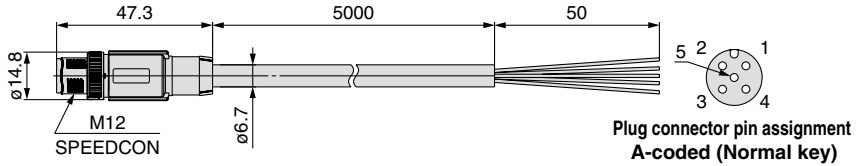


DeviceNet™

- ⑤ **PCA-1557633**
For DeviceNet™
(Socket)

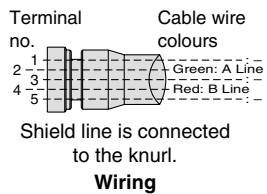
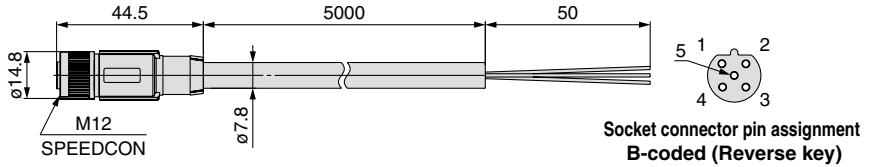


- ⑥ **PCA-1557646**
For DeviceNet™
(Plug)

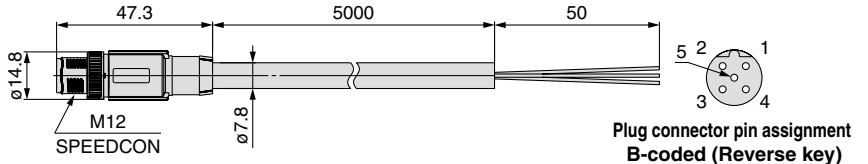


PROFI®
PROCESS FIELD BUS

- ⑩ **PCA-1557688**
For PROFIBUS DP
(Socket)



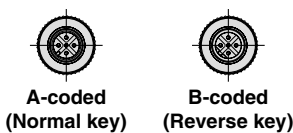
- ⑪ **PCA-1557691**
For PROFIBUS DP
(Plug)



Fieldwireable connector

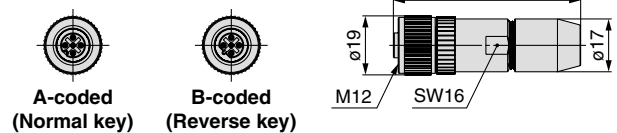
Plug

- ③ **PCA-1557617** For CC-Link
⑦ **PCA-1557659** For DeviceNet™
⑫ **PCA-1557701** For PROFIBUS DP



Socket

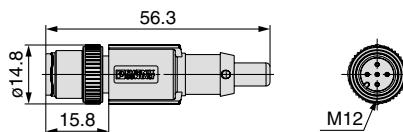
- ④ **PCA-1557620** For CC-Link
⑧ **PCA-1557662** For DeviceNet™
⑬ **PCA-1557714** For PROFIBUS DP



Terminal plug

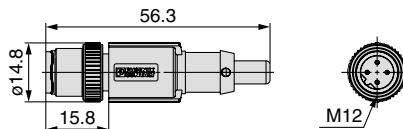
DeviceNet™

- ⑨ **PCA-1557675**
Terminal resistor
for DeviceNet™



PROFI®
PROCESS FIELD BUS

- ⑭ **PCA-1557727**
Terminal resistor
for PROFIBUS DP



Sensor/Switch-Input Device

Fieldwireable Connector

Specifications

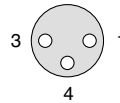
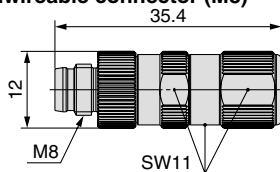
Part no.	PCA-1557730	PCA-1557743	PCA-1557756	
Product image/Pin assignment				
Number of functional poles	M8: 3 poles	M12: 4 poles		
Key type	—	A-coded (Normal key)		
Wiring specifications (Note)	Cable O.D.	3.0 to 5.0 mm	3.5 to 6.0 mm	4.0 to 8.0 mm
	Wire gauge (Stranded wire cross section)	0.14 to 0.25 mm ² /AWG26 to 24 0.25 to 0.34 mm ² /AWG24 to 22	0.14 to 0.34 mm ² /AWG26 to 22	0.34 to 0.75 mm ² /AWG22 to 18
	Core wire diameter (Including insulating material)	1.0 to 1.6 mm	0.7 to 1.3 mm	1.3 to 2.5 mm
Connection type	Piercecon® connection	QUICKON-ONE connection		
Rating/Performance	Rated current	4 A		
	Rated voltage	60 V	250 V	
	Contact resistance	≤5 mΩ		
	Insulation resistance	≥100 MΩ		
	Withstand voltage	1.0 kV	1.4 kV	
	Ambient temperature	-40 to 85°C	-25 to 80°C	
	Protection class	IP67 (Only with screw tightened)		
	Allowable repeated insertion/withdrawal	100	200	
Allowable number of repeated connection between conductors of the same cross section	10			
Vibration resistance	10 to 500 Hz/98 m/s ²			
Material	Material of knurl	Brass	Zinc for die casting	
	Contact (Surface treatment)	CuZn (Au plating (Ni plating))		
	Insulating material	Polyamide (PA6.6)		
Weight (Mass)	Approx. 14 g	Approx. 13 g	Approx. 15 g	

Note) The shaded parts show the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

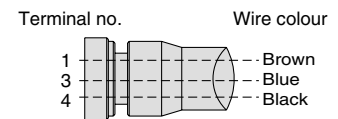
Dimensions

PCA-1557730

Fieldwireable connector (M8)



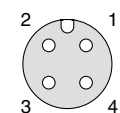
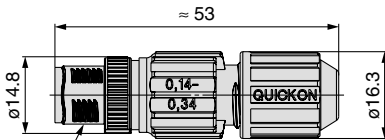
Plug connector pin assignment



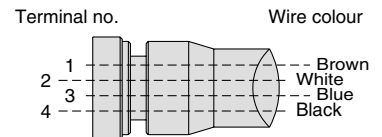
Wiring

PCA-1557743

Fieldwireable connector (M12)



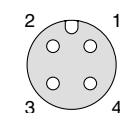
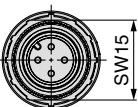
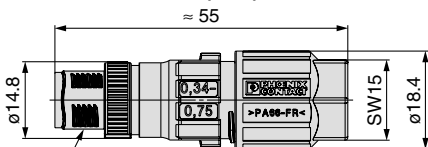
Plug connector pin assignment
A-coded (Normal key)



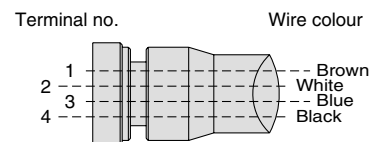
Wiring

PCA-1557756

Fieldwireable connector (M12)



Plug connector pin assignment
A-coded (Normal key)


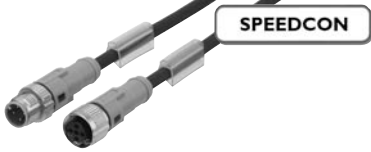




Wiring

Sensor/Switch-Input Device

Cable with Connector

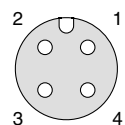
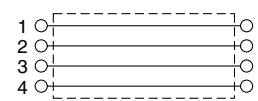
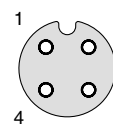
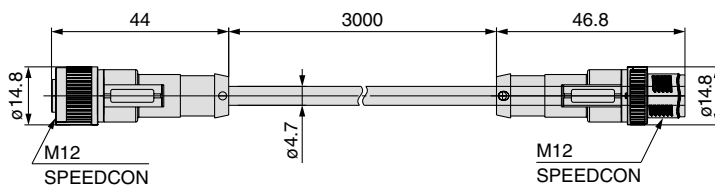
Specifications

Part no.	PCA-1557769	PCA-1557772		
Product image	  			
Number of functional poles	M12: 4 poles	M8: 3 poles		
Key type	A-coded (Normal key)	—		
Wiring specifications	Fixed cable length	3 m		
	Cable O.D.	4.7 ±0.15 mm	4.4 ±0.15 mm	
	Wire gauge (Stranded wire cross section)	0.34 mm ² /AWG22	0.25 mm ² /AWG24	
Rating/Performance	Rated current	4 A		
	Rated voltage	250 V	60 V	
	Contact resistance	≤5 mΩ		
	Insulation resistance	≥100 MΩ		
	Withstand voltage	1.4 kV	1.0 kV	
	Ambient temperature	Connector	-25 to 90°C	
		Cable	-5 to 80°C	
		Operating Fixed	-40 to 80°C	
	Protection class	IP67 (Only with screw tightened)		
	Allowable repeated insertion/withdrawal	200		
Cable retaining force	150 N/15 sec.	250 N/15 sec.		
Vibration resistance	10 to 500 Hz/98 m/s ²			
Material	Material of knurl	Zinc for die casting		
	Contact (Surface treatment)	CuSn (Au plating (Ni plating))		
	Insulating material	Thermoplastic polyurethane (TPU)		
	Material of sheath	Polyurethane Black (PUR Black)		
Weight (Mass)	Approx. 111 g	Approx. 80 g		

Dimensions

PCA-1557769

Cable with M12 connector (4 poles)

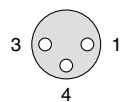
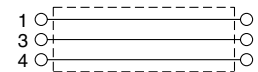
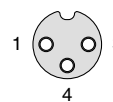
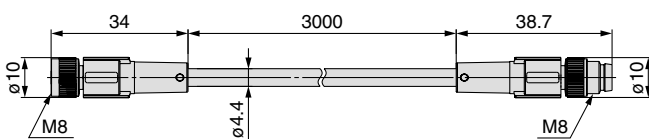


Socket connector pin assignment
A-coded (Normal key)

Plug connector pin assignment
A-coded (Normal key)

PCA-1557772

Cable with M8 connector (3 poles)



Socket connector pin assignment

Plug connector pin assignment

Sensor/Switch-Input Device

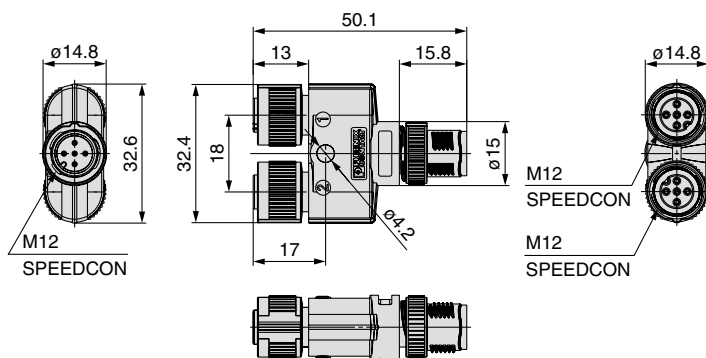
Y Connector

Specifications

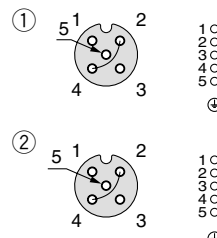
Part no.		PCA-1557785
Product image		
Number of functional poles		2 x M12: 4 poles + PE – M12: 4 poles + PE
Key type		A-coded (Normal key)
Rating/Performance	Rated current	4 A
	Rated voltage	60 V
	Contact resistance	≤5 mΩ
	Insulation resistance	≥100 MΩ
	Withstand voltage	1.0 kV
	Ambient temperature	-25 to 90°C
	Protection class	IP67 (Only with screw tightened)
	Allowable repeated insertion/withdrawal	200
Material	Vibration resistance	10 to 500 Hz/98 m/s ²
	Material of knurl	Zinc for die casting
	Contact (Surface treatment)	CuZn (Au plating (Ni plating))
	Insulating material	Thermoplastic polyurethane (TPU)
Weight (Mass)		Approx. 29 g

Dimensions

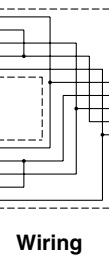
PCA-1557785
Y connector
(2 x M12-M12)



Socket connector
pin assignment
A-coded (Normal key)



Socket connector
pin assignment
A-coded (Normal key)



Plug connector
pin assignment
A-coded (Normal key)



Connection image



Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “**Caution,**” “**Warning**” or “**Danger.**” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC), Japan Industrial Standards (JIS)^{Note 1)} and other safety regulations^{Note 2)}.

Note 1) ISO 4414: Pneumatic fluid power – General rules relating to systems.

ISO 4413: Hydraulic fluid power – General rules relating to systems.

IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)

ISO 10218-1992: Manipulating industrial robots -Safety.

JIS B 8370: General rules for pneumatic equipment.


JIS B 8361: General rules for hydraulic equipment.


JIS B 9960-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)


JIS B 8433-1993: Manipulating industrial robots - Safety.

etc.

Note 2) Labour Safety and Sanitation Law, etc.

 **Caution:** Operator error could result in injury or equipment damage.

 **Warning:** Operator error could result in serious injury or loss of life.

 **Danger :** In extreme conditions, there is a possibility of serious injury or loss of life.

Warning

1. The compatibility of the product is the responsibility of the person who designs the system or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific system must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the system.

2. Only system trained personnel should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced operators.

3. Do not service machinery/equipment or attempt to remove product until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed once measures to prevent falling or runaway of the driven objects have been confirmed.

2. When the product is to be removed, confirm the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.

3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. If the product is to be used in any of the following conditions or environment, please contact SMC first and be sure to take all necessary safety precautions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.

2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.

3. An application which could have negative effects on people, property, or animals requiring special safety analysis.

4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.



Series EX600

Specific Product Precautions 1

Be sure to read this before handling.

Refer to back page 1 for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

Design / Selection

Warning

- 1. Use this product within the specification range.**
Using beyond the specified specifications range can cause fire, malfunction, or damage to the system. Confirm the specifications when operating.
- 2. When using for an interlock circuit:**
 - Provide a multiple interlock system which is operated by another system (such as mechanical protection function).
 - Perform an inspection to check that it is working properly.

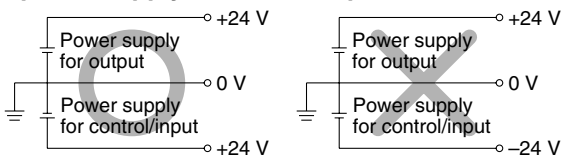
This may cause possible injury due to malfunction.

Caution

- 1. Use the UL-certified products below for combined direct current power supply.**
 - (1) Circuit in which voltage and current are controlled in accordance with UL508
Circuit which makes the winding wire in the secondary side of the insulation transformer (which meets the following conditions) to be as the power supply
 - Maximum voltage (with no load):
30 Vrms (42.4 V at peak) or less
 - Maximum current:
 1. 8 A or less (including short-circuited)
 2. and in case of being controlled by circuit protection devices (fuse, etc) which meets the below rated voltages.

Voltage with no load (V peak)	Maximum rated current
0 to 20 (V)	5.0
Exceeding 20 (V) up to 30 (V)	100
	Voltage figure at peak

- (2) Class 2 power supply unit in accordance with UL1310 or circuit (Class 2 circuit) in accordance with UL1585, that is powered by Class 2 transformer with the maximum of 30 Vrms (42.4 V at peak)
- 2. Use this product within the specified voltage range.**
Using beyond the specified voltage range is likely to cause the units and connecting devices to be damaged or to malfunction.
 - 3. The power supply for the unit should be 0 V as the standard for both power supply for output as well as power supply for control/input.**



- 4. Do not install a unit in a place where it can be used as a foothold.**
Applying any excessive load such as stepping on the unit by mistake or placing a foot on it, will cause it to break.
- 5. Keep the surrounding space free for maintenance.**
When designing a system, take into consideration the amount of free space needed for performing maintenance.
- 6. Do not remove the name plate.**
Improper maintenance or incorrect use of instruction manual can cause failure and malfunction. Also, there is a risk of losing conformity with safety standards.
- 7. Beware of inrush current when the power supply is turned on.**
Some connected loads can apply an initial charge current which will trigger the over current protection function, causing the unit to malfunction.

Mounting

Caution

- 1. When handling and assembling units:**
 - Do not touch the sharp metal parts of the connector or plug.
 - Do not apply excessive force to the unit.
The connecting portions of the unit are firmly joined with seals.
 - When joining units, take care not to get fingers caught between units.
Injury can result.
- 2. Do not drop, bump, or apply excessive impact.**
Otherwise, the unit can become damaged, malfunction, or fail to function.
- 3. Observe the tightening torque range.**
Tightening outside of the allowable torque range will likely damage the product.
IP67 protection class cannot be guaranteed if the screws are not tightened to the specified torque.
- 4. When lifting a large size manifold solenoid valve unit, take care to avoid causing stress to the valve connection joint.**
The connection parts of the unit may be damaged.
Because the unit may be heavy, carrying and installation should be performed by more than one operator to avoid strain or injury.
- 5. When placing a manifold, mount it on a flat surface.**
Torsion in the whole manifold can lead to trouble such as air leakage or defective insulation.

Wiring

Caution

- 1. Confirm grounding to maintain the safety of the reduced wiring system and for anti-noise performance.**
Provide a specific grounding as close to the unit as possible to minimize the distance to grounding.
- 2. Avoid repeatedly bending or stretching the cable and applying a heavy object or force to it.**
Wiring applying repeated bending and tensile stress to the cable can break the circuit.
- 3. Avoid miswiring.**
If miswired, there is a danger of malfunction or damage to the reduced wiring system.
- 4. Do not wire while energizing the product.**
There is a danger of malfunction or damage to the reduced wiring system or input/output equipment.



Series EX600

Specific Product Precautions 2

Be sure to read this before handling.

Refer to back page 1 for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

Wiring

Caution

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

Noise or surge produced by signal line resulting from the power line or high pressure line could cause malfunction.

Wiring of the reduced wiring system or input/output device and the power line or high pressure line should be separated from each other.

6. Confirm the wiring insulation.

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

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

Noise in signal lines may cause malfunction.

8. When connecting wires of input/output device or handheld terminal, prevent water, solvent or oil from entering inside from the connector section.

This can cause damage, equipment failure or malfunction.

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

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

Operating Environment

Warning

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

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

Caution

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

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

- 1) The units are connected properly with connector.
- 2) Suitable mounting of each unit and manifold valve.
- 3) Be sure to mount a seal cap on any unused connectors.

If using in an environment that is exposed to water splashes, please take measures such as using a cover.

Also, the Handheld Terminal confirms to IP20, so prevent foreign matter from entering inside, and water, solvent or oil from coming in direct contact with it.

Operating Environment

Caution

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

Failure to do so may cause damage or malfunction.

The effect of countermeasures should be checked in individual equipment and machine.

- 1) Where noise is generated by static electricity, etc.
- 2) Where there is a strong electric field
- 3) Where there is a danger of exposure to radiation
- 4) When in close proximity to power supply lines

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

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

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

This may damage the unit and cause it to malfunction.

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

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

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

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

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

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

This may cause malfunction or damage.

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

This may cause malfunction or damage.

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

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

11. Do not use in direct sunlight.

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

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

This may cause malfunction.

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

Such a place is likely to cause malfunction.



Series EX600

Specific Product Precautions 3

Be sure to read this before handling.

Refer to back page 1 for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valves Precautions.

Adjustment / Operation

⚠ Warning

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

<Handheld Terminal>

2. **Do not apply pressure to the LCD display.**
There is a possibility of the crack of LCD display and injuring.
3. **The forced input/output function is used to change the signal status forcibly. When operating this function, be sure to check the safety of the surroundings and installation.**
Otherwise, injury or equipment damage could result.
4. **Incorrect setting of parameters can cause malfunction. Be sure to check the settings before use.**
This may cause injury or equipment damage.

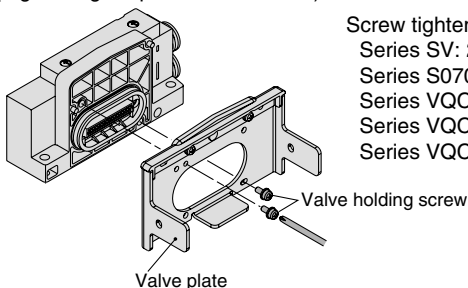
⚠ Caution

1. **Use a watchmaker's screwdriver with thin blade for the setting of each switch of the SI unit. When setting the switch, do not touch other unrelated parts.**
This may cause parts damage or malfunction due to a short circuit.
2. **Provide adequate setting for the operating conditions.**
Failure to do so could result in malfunction.
Refer to the instruction manual for setting of the switches.
3. **For the details of programming and address setting, refer to the manual from the PLC manufacturer.**
The content of programming related to protocol is designed by the manufacturer of the PLC used.

<Handheld Terminal>

4. **Do not press the setting buttons with a sharp pointed object.**
This may cause damage or malfunction.
5. **Do not apply excessive load and impact to the setting buttons.**
This may cause damage, equipment failure or malfunction.

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



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

Maintenance

⚠ Warning

1. **Do not disassemble, modify (including circuit board replacement) or repair this product.**
Such actions are likely to cause injuries or breakage.
2. **When an inspection is performed,**
 - Turn off the power supply.
 - Stop the air supply, exhaust the residual pressure in piping and verify that the air is released before performing maintenance work.
 Unexpected malfunction of system components and injury can result.

⚠ Caution

1. **When handling and replacing the unit:**
 - Do not touch the sharp metal parts of the connector or plug.
 - Do not apply excessive force to the unit.
The connecting portions of the unit are firmly joined with seals.
 - When joining units, take care not to get fingers caught between units.
Injury can result.
2. **Perform periodic inspection.**
Unexpected malfunction in the system composition devices is likely to occur due to malfunction of machinery or equipment.
3. **After maintenance, make sure to perform an appropriate functionality inspection.**
In cases of abnormality such as faulty operation, stop operation. Unexpected malfunction in the system composition devices is likely to occur.
4. **Do not use benzene and thinner for cleaning units.**
Damage to the surface or erasure of the display can result. Wipe off any stains with a soft cloth. If the stain is persistent, wipe off with a cloth soaked in a dilute solution of neutral detergent and wrung out tightly, and then finish with a dry cloth.

Other

⚠ Caution

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

■ Trademark

DeviceNet™ is a trademark of ODVA.

Product names described in this catalog may be used as trademarks by each manufacturer.




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