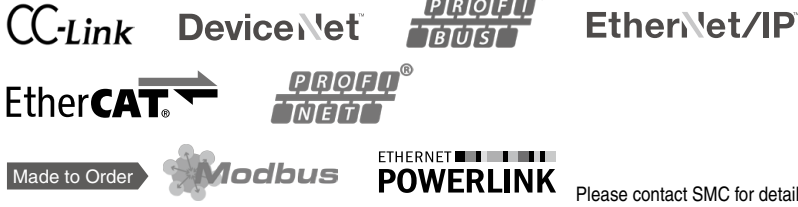


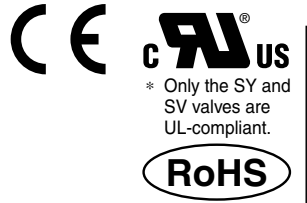
# Fieldbus System (For Input/Output)

## EX600 Series


Compatible Protocols



Please contact SMC for details on compatible products.



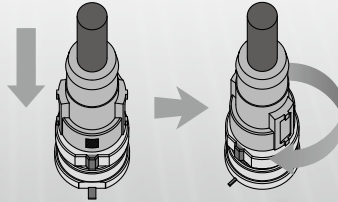
\* Only the SY and SV valves are UL-compliant.



**Dual-port SI unit (EtherNet/IP™) product**

- Can be used for linear type or DLR type topology
- Supports QuickConnect™ function
- Status checks and settings can be performed on a web browser.

Wiring time can be reduced with SPEEDCON (Phoenix Contact). Just insert and make a 1/2 rotation!

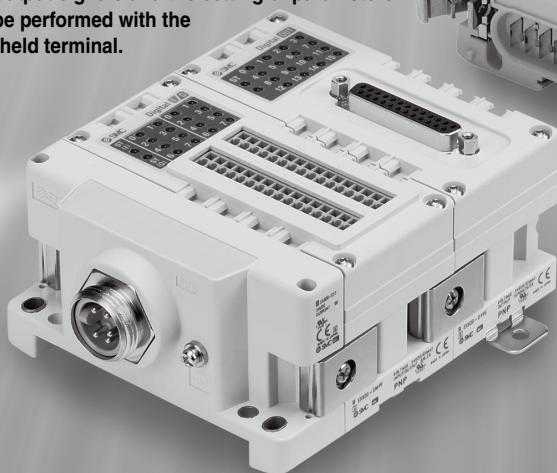


**IP67**  
\* Some products are IP40.



### Self Diagnosis Function

It is possible to ascertain the maintenance period and identify the parts that require maintenance by using the input/output open-circuit detection function and the input/output signal ON/OFF counter function. Also, the monitoring of input and output signals and the setting of parameters can be performed with the handheld terminal.



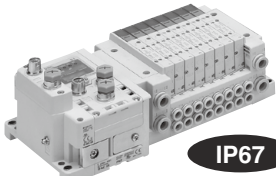
**Max. 9 units\*1**  
can be connected in any order.

The input unit to connect input devices such as auto switches, pressure switches, and flow switches, and the output unit to connect output devices such as solenoid valves, relays, and indicator lights can be connected in any order.

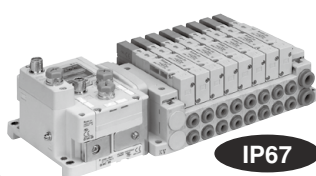
\*1 Excludes SI units

### Manifold Solenoid Valves

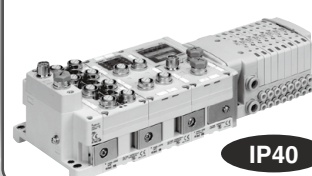
**SY3000/5000/7000 Series**



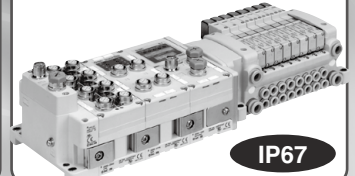
**SV1000/2000/3000 Series**



**S0700 Series**

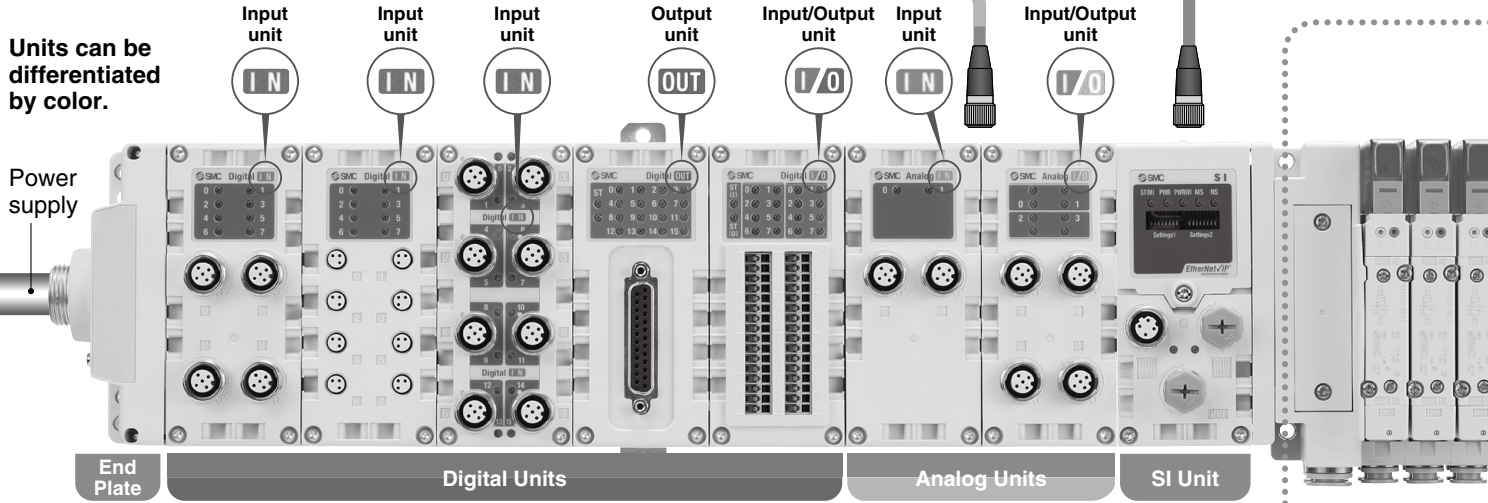
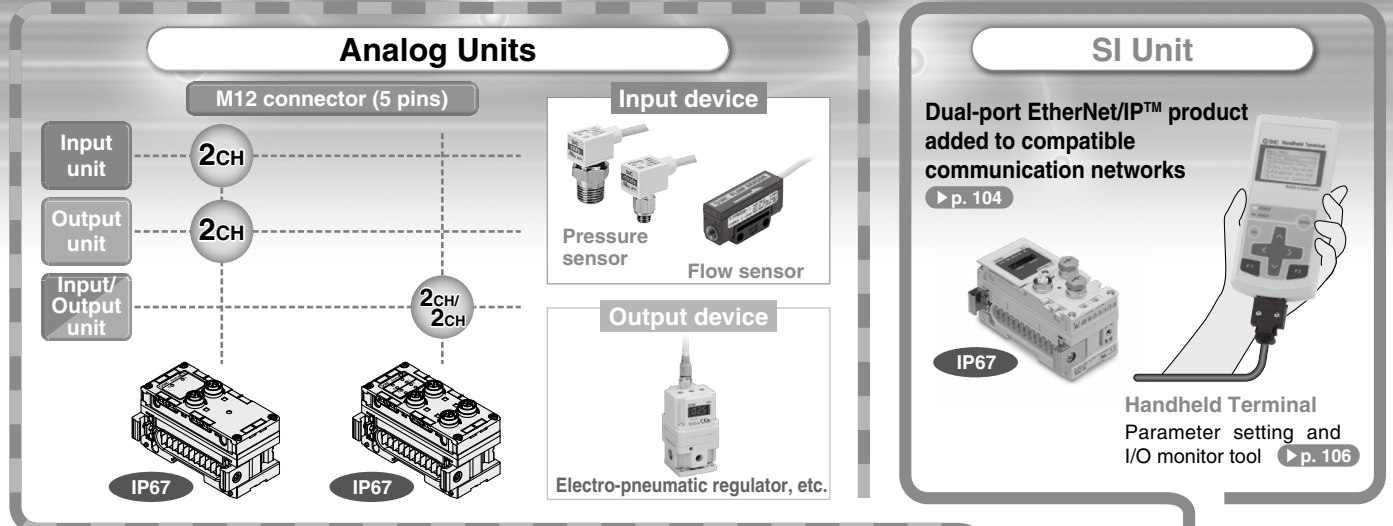


**VQC1000/2000/4000/5000 Series**

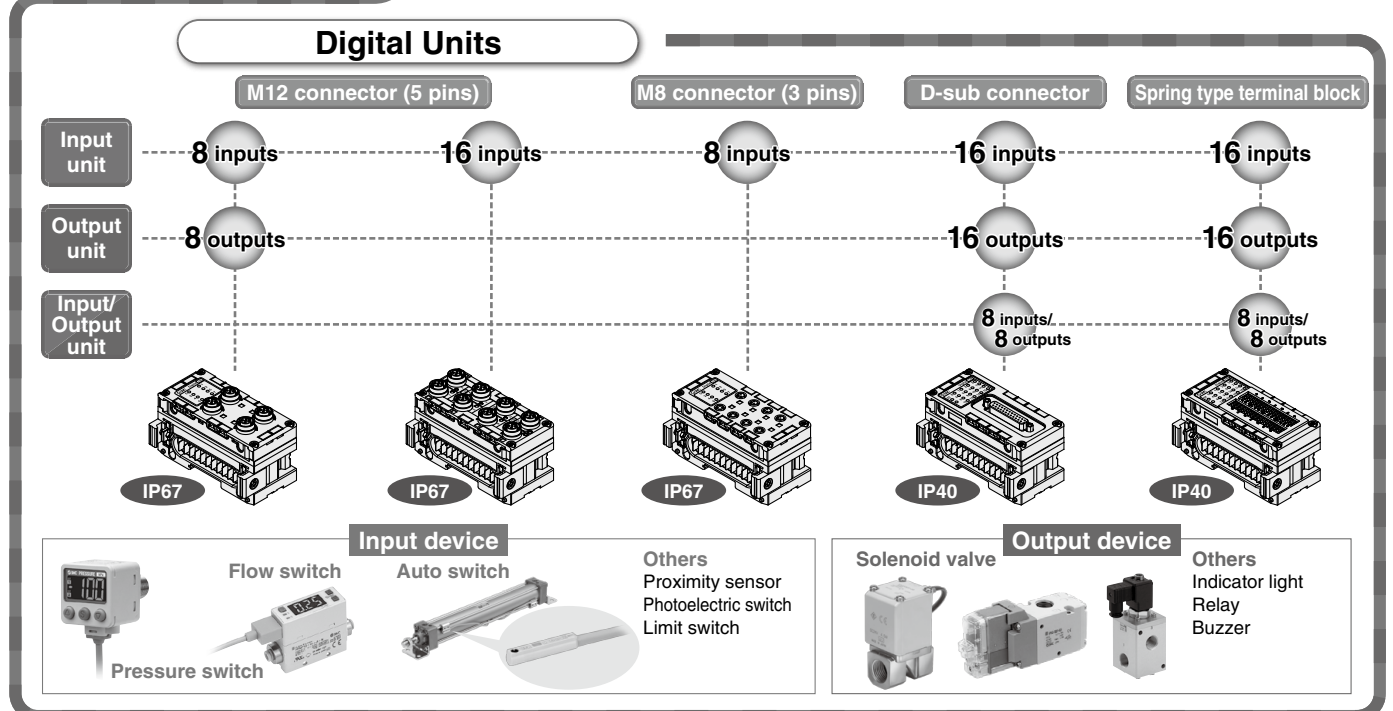


Type 1	EX260
Type 1	EX123/124/126
Type 2	EX500
Type 2	EX600
Type 3	EX245
Type 3	EX250
Type 1	EX120/121/122
Type 1	EX140
Type 2	EX180
Type 2	EX510
M8/M12	
ATEX	

# EX600 Series Configurations



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







**SY Series (IP67)**

**SV Series (IP67)**

**S0700 Series (IP40)**

**VQC Series (IP67)**

**SI Unit**

Unit to connect various Fieldbuses with the EX600 system

▶ p. 104

**Digital Unit**

Unit to input or output digital (switch) signals

▶ p. 105

**Analog Unit**

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

▶ p. 105, 106

**End Plate**

Unit to supply power to the EX600 system

▶ p. 106

**Handheld Terminal**

Parameter setting and I/O monitor tool

▶ p. 106

**Accessories**

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

▶ p. 121

**Made to Order** ..... ▶ p. 128

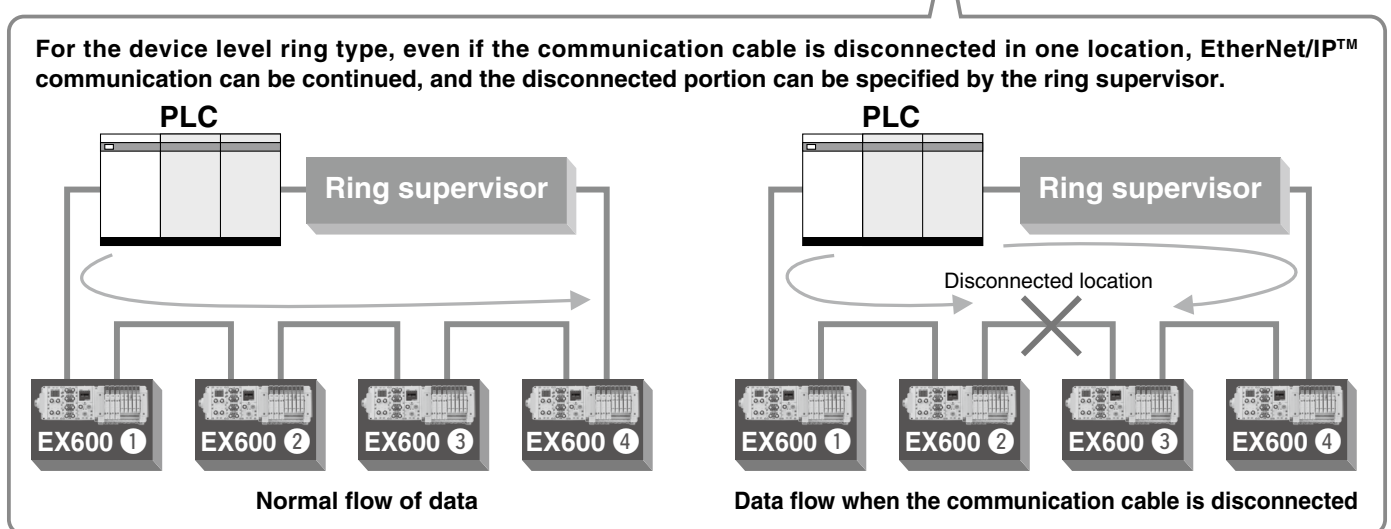
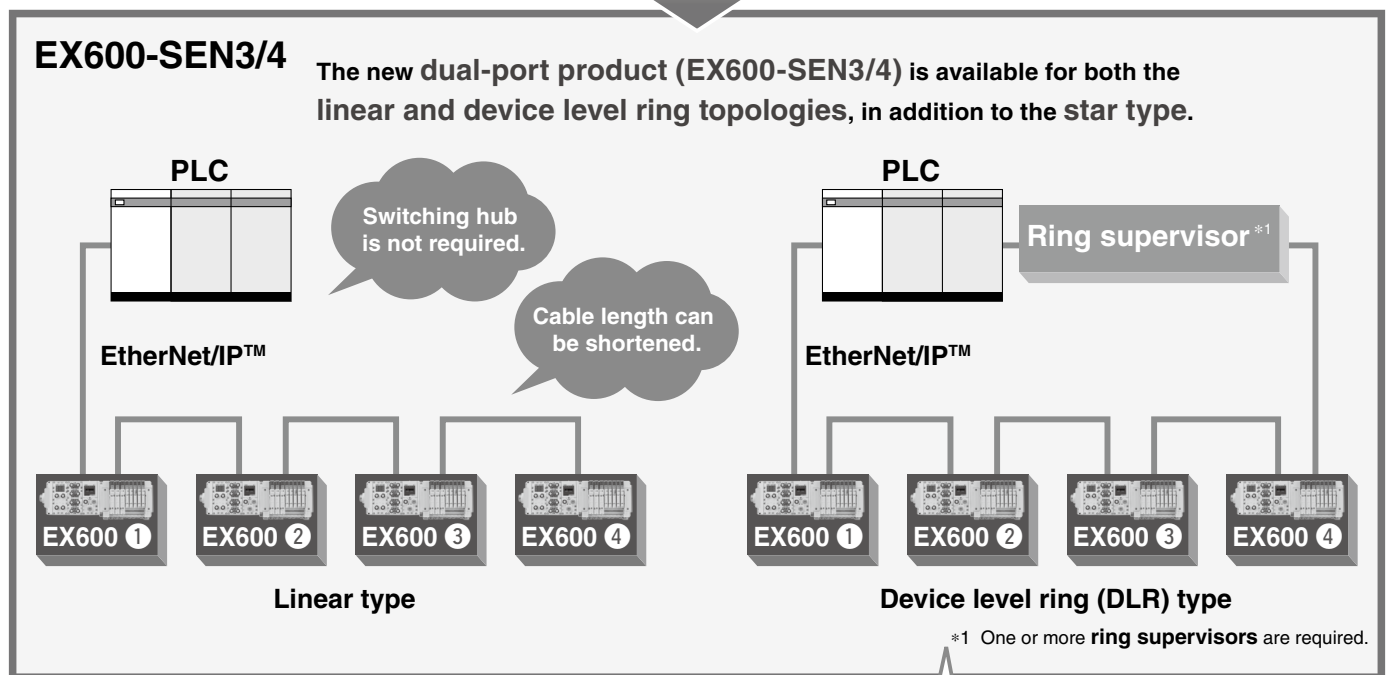
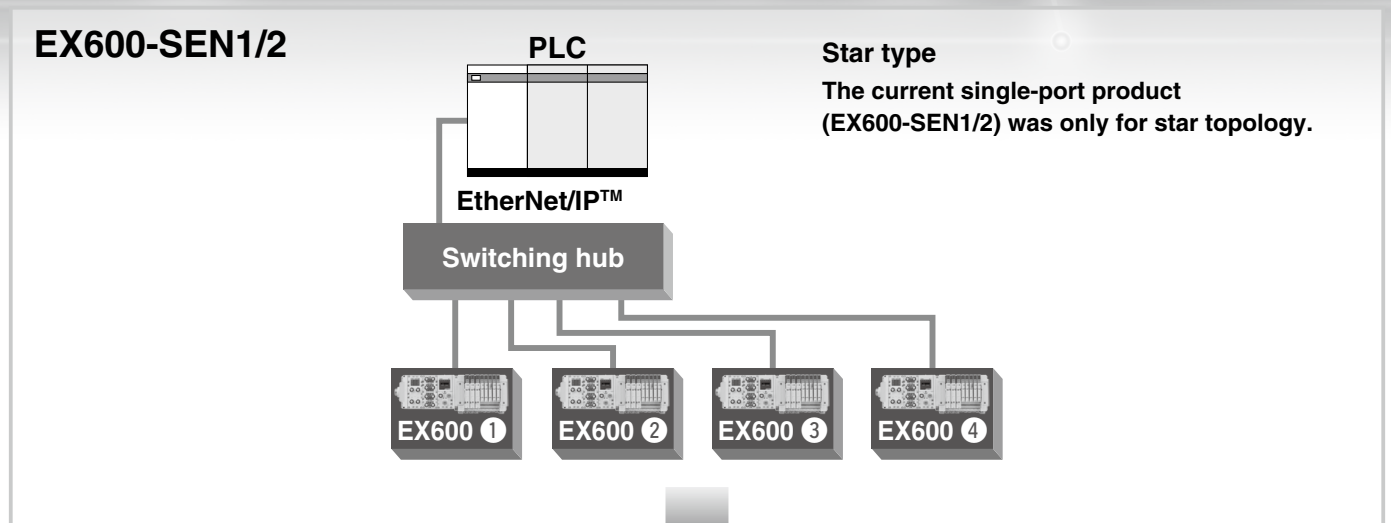
- MRP (PROFINET) compatible, Ethernet POWERLINK compatible
- Communication cable

Type 1	EX260
Type 2	EX123/124/126
Type 2	EX500
Type 3	EX600
Type 3	EX245
Type 3	EX250
Type 1	EX120/121/122
Type 1	EX140
Type 1	EX180
Type 2	EX510
Type 2	M8/M12
Type 2	ATEX

# Latest EtherNet/IP™ Technology

The following functions are available for the dual-port EtherNet/IP™ product (EX600-SEN3/4).

● Added: Compatible Topologies (Connection Configuration)





## QuickConnect™ Function Available

From power ON to communication connection

10 sec. →

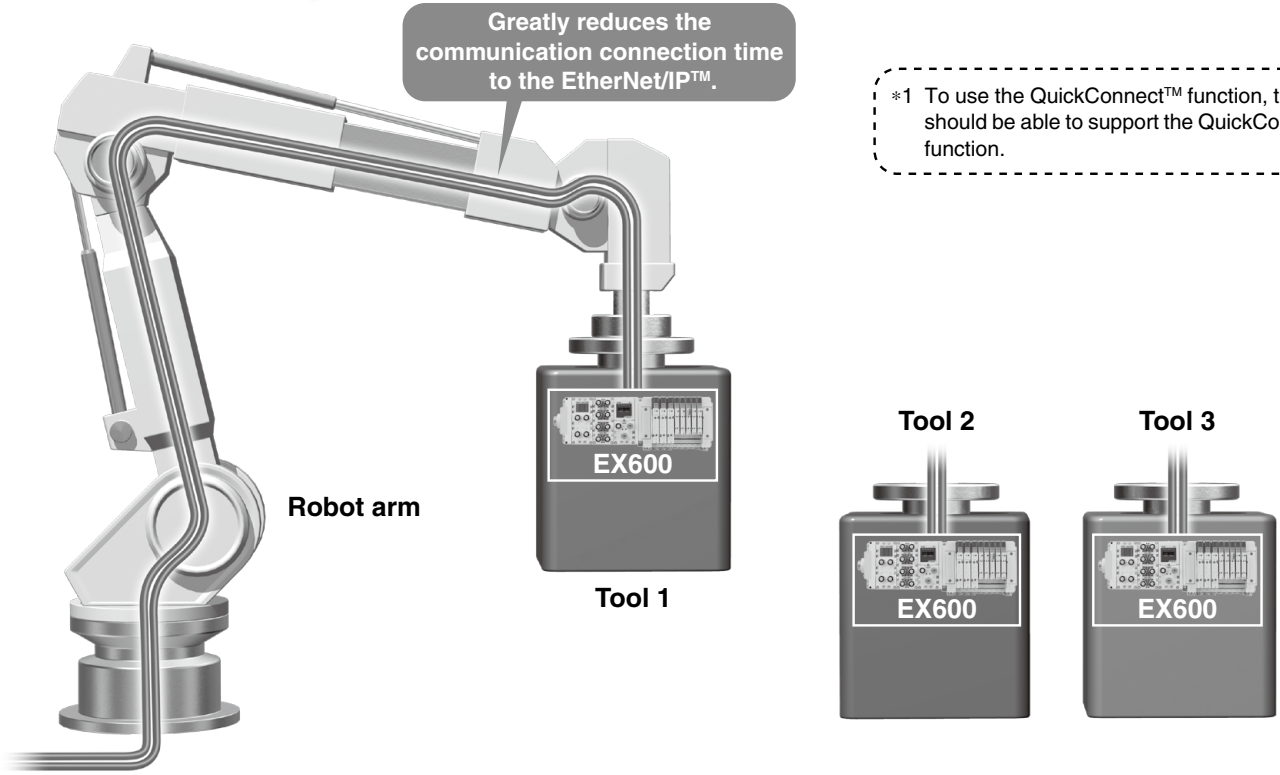
Approx.  
**0.5** sec.

For tool changers, it takes about 10 seconds for communication to be connected in common EtherNet/IP™ products after the power of the device installed on the tool is turned ON.

Since the QuickConnect™ function\*1 is available for the EX600-SEN3/4, communication can be connected in about 0.5 seconds.

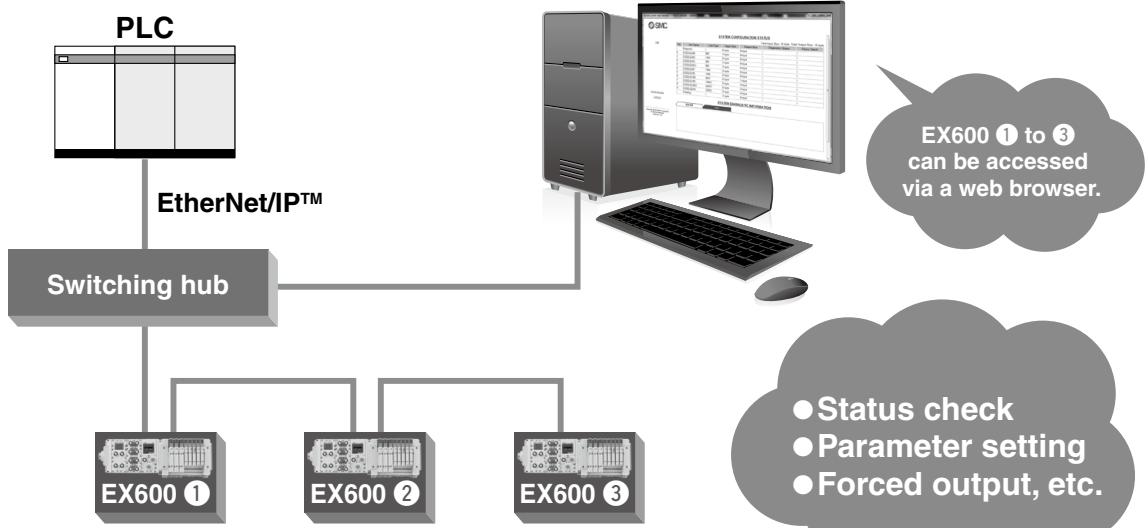
Greatly reduces the communication connection time to the EtherNet/IP™.

\*1 To use the QuickConnect™ function, the PLC should be able to support the QuickConnect™ function.



## Built-in Web Server Function

The EX600-SEN3/4 has a built-in web server function, which enables status checks, parameter settings, and forced output of the EX600 using general-purpose web browsers, such as Internet Explorer. Start-up of the system and maintenance can be performed efficiently.



Connection example



Type 1	EX260
	EX123/124/126
Type 2	EX500
	EX600
Type 3	EX245
	EX250
Type 1	EX140
	EX180
Type 2	EX510
	M8/M12
	ATEX

# Fieldbus System EX600

## D-sub Connector

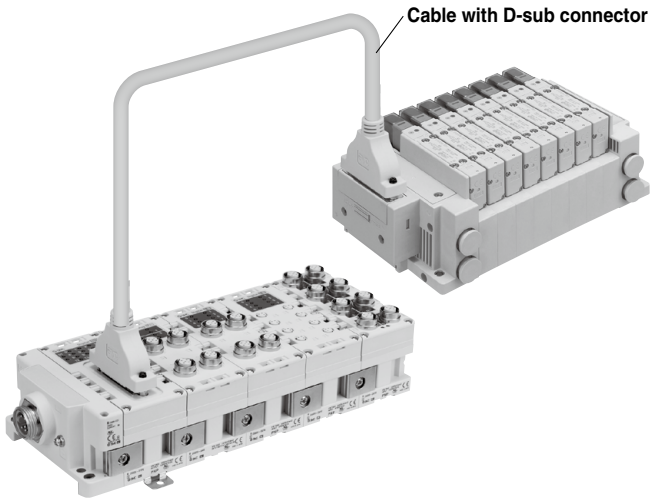
IP40

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

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

- SY series    • S0700 series    • SJ series    • SQ series
- SV series    • VQC series    • VQ series

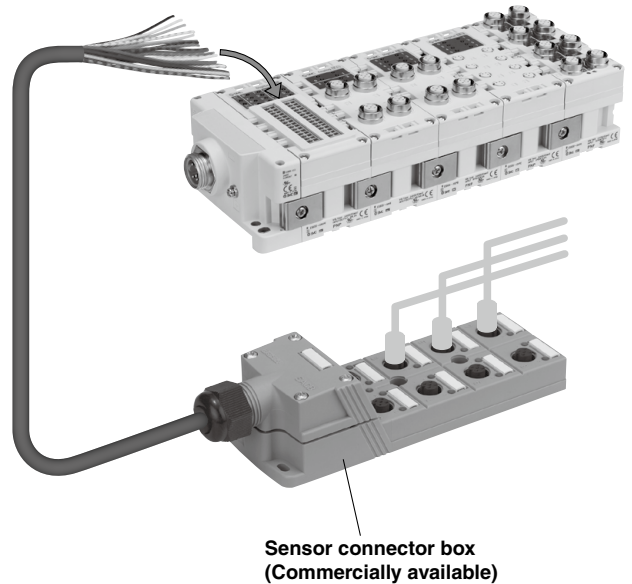
\* Please limit the number of valve connections to 16 stations for single and 8 stations for double. Refer to the catalog of each product for pin assignment details.



## Spring Type Terminal Block

IP40

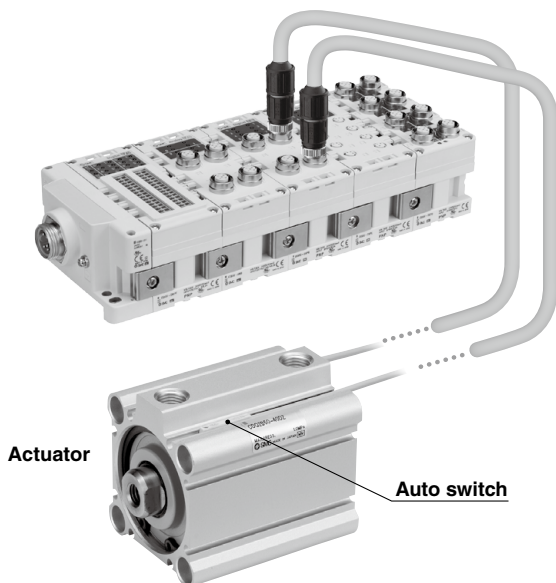
These terminal block units are compatible with individual wiring configurations. There are three types of units: for digital input, output, and input/output. Wiring connection to a sensor connector box, etc., can be carried out easily using only a flat head screwdriver.



## Digital Input Unit

IP67

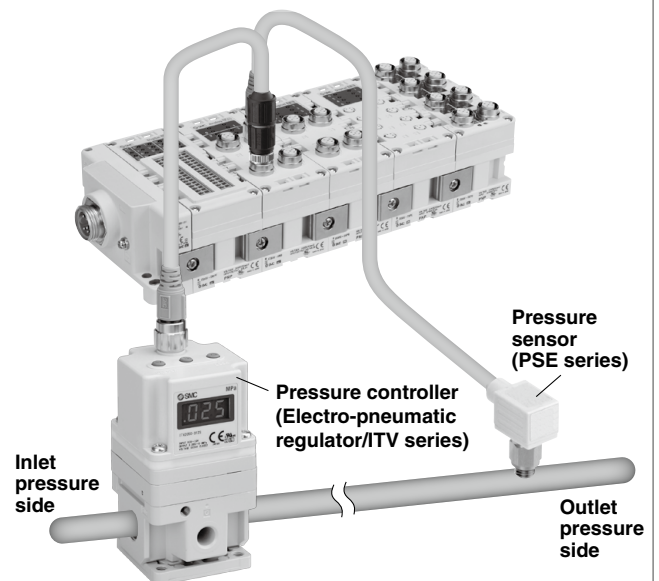
This unit is for inputting a digital signal (ON/OFF signal). The signal of a 2-wire/3-wire auto switch attached to the actuator can be acquired to feedback a signal to the PLC. The control signal of an entire system can be managed by a Fieldbus system.



## Analog Input/Output Unit

IP67

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





## Self Diagnosis Function

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

### Short/Open-Circuit Detection Function

It is possible to detect short or open circuits of input devices such as electronic 2-wire switches and 3-wire switches and output devices such as solenoid valves. 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

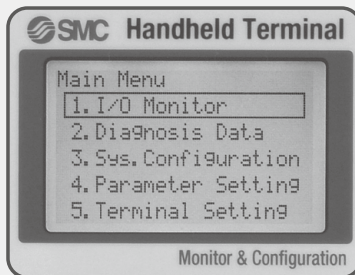
It is possible to ascertain the maintenance period and identify the parts that require maintenance by an input and output signal ON/OFF counter function. When the counter function is enabled and a certain number of contact operations is reached, the display of the counter will flash in red.

\* The counter function is not provided with analog units.

## Handheld Terminal

### Forced Input and Output Function

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



### Password Setting Function

### Simple Operation

Cursor button: Mode and setting change, etc.

Function key: Value and command entry, etc.



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

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

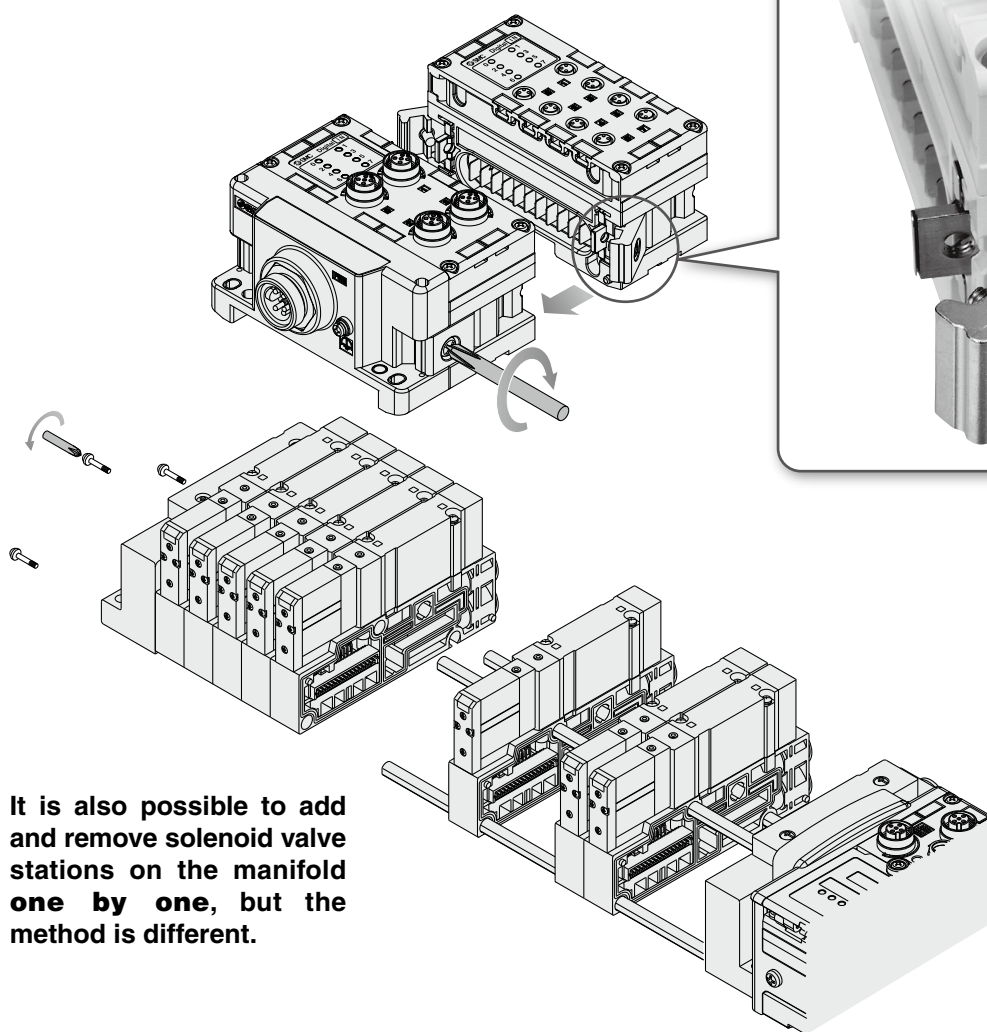
**A parameter** is a set value to change the function and operation of the product through a PLC or handheld terminal. The desired operation for the customer's application is realized by the set values. There are some parameters that can only be set using the handheld terminal of this series.

Type 1	EX260
Type 2	EX123/124/126
Type 2	EX500
Type 2	EX600
Type 3	EX245
Type 3	EX250
Type 1	EX140
Type 1	EX120/121/122
Type 2	EX510
Type 2	EX180
Type 2	M8/M12
Type 2	ATEX

# Fieldbus System EX600

● Individual units can be connected and removed one by one.

A unique clamping method is adopted to prevent screws from falling out. Units can be separated easily by loosening the joint bracket.



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



# 5-Port Solenoid Valves SY3000/5000/7000

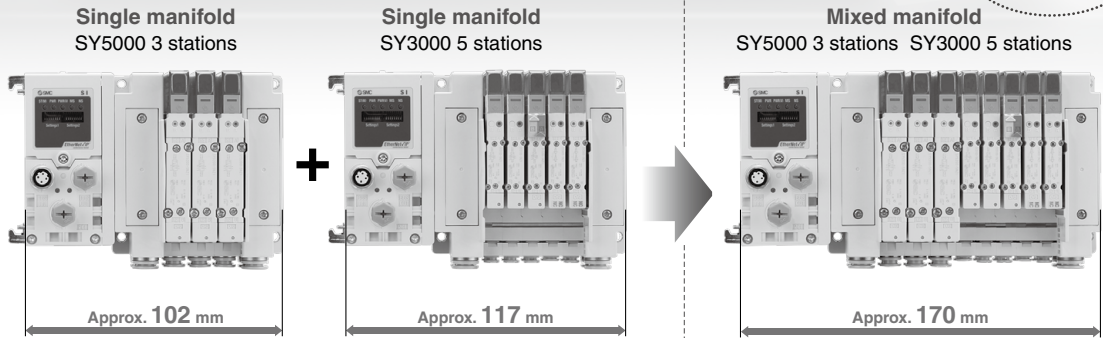
● Different sizes (SY3000/5000 or SY5000/7000) can be mixed!

The installation area, amount of wiring, and number of SI units can all be reduced.

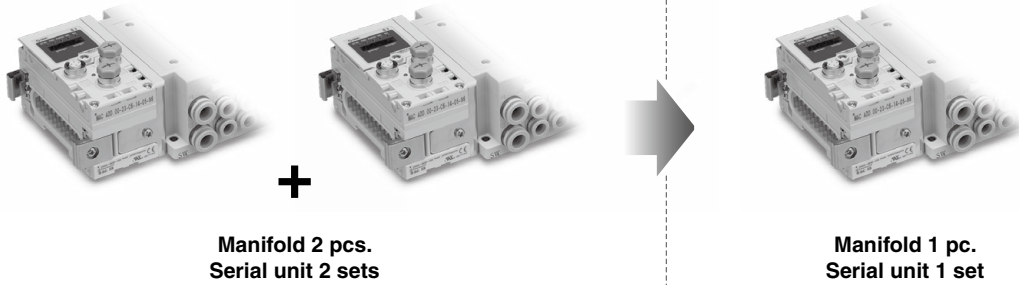
Overall length of manifold  
Approx. 22% reduction

Example of SY3000 and SY5000

Installation space

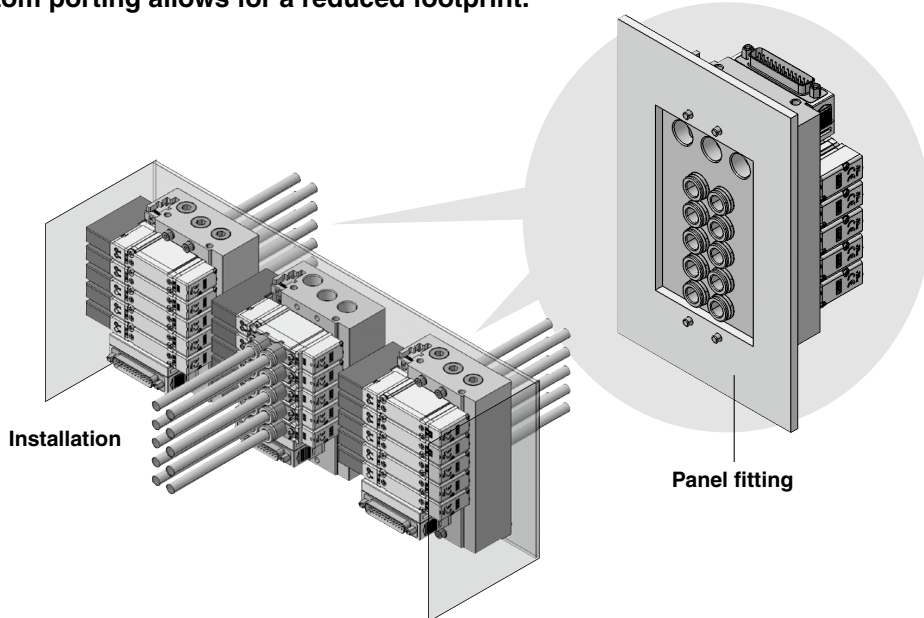


Number of SI units/  
Unit cost



● Bottom-ported type is available!

Top or bottom porting allows for a reduced footprint.

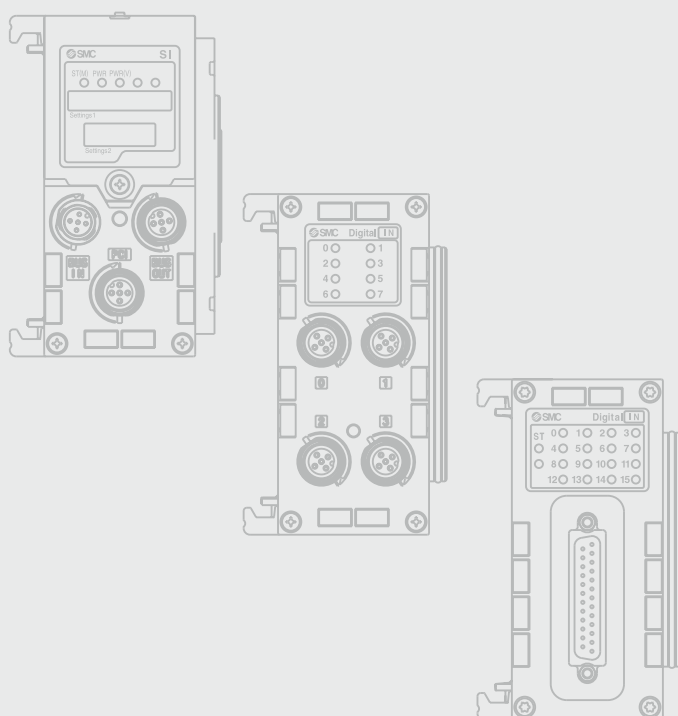
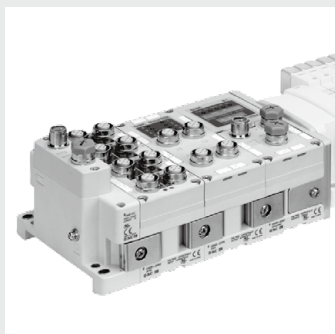


Type 1	EX260
Type 2	EX123/124/126
Type 2	EX500
Type 3	EX600
Type 3	EX245
Type 3	EX250
Type 1	EX120/121/122
Type 1	EX140
Type 1	EX180
Type 2	EX510
Type 2	M8/M12
Type 2	ATEX

# CONTENTS

## Type 3 Integrated input-output type

### Fieldbus System (For Input/Output) EX600 Series



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⑤ Marker (1 sheet, 88 pcs.) .....	p. 122
⑥ Power Supply Cable (7/8 inch connector) .....	p. 122
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⑩ Field-wireable Communication Connector .....	p. 126
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② Ethernet POWERLINK compatible .....	p. 128
Communication Cable .....	p. 128

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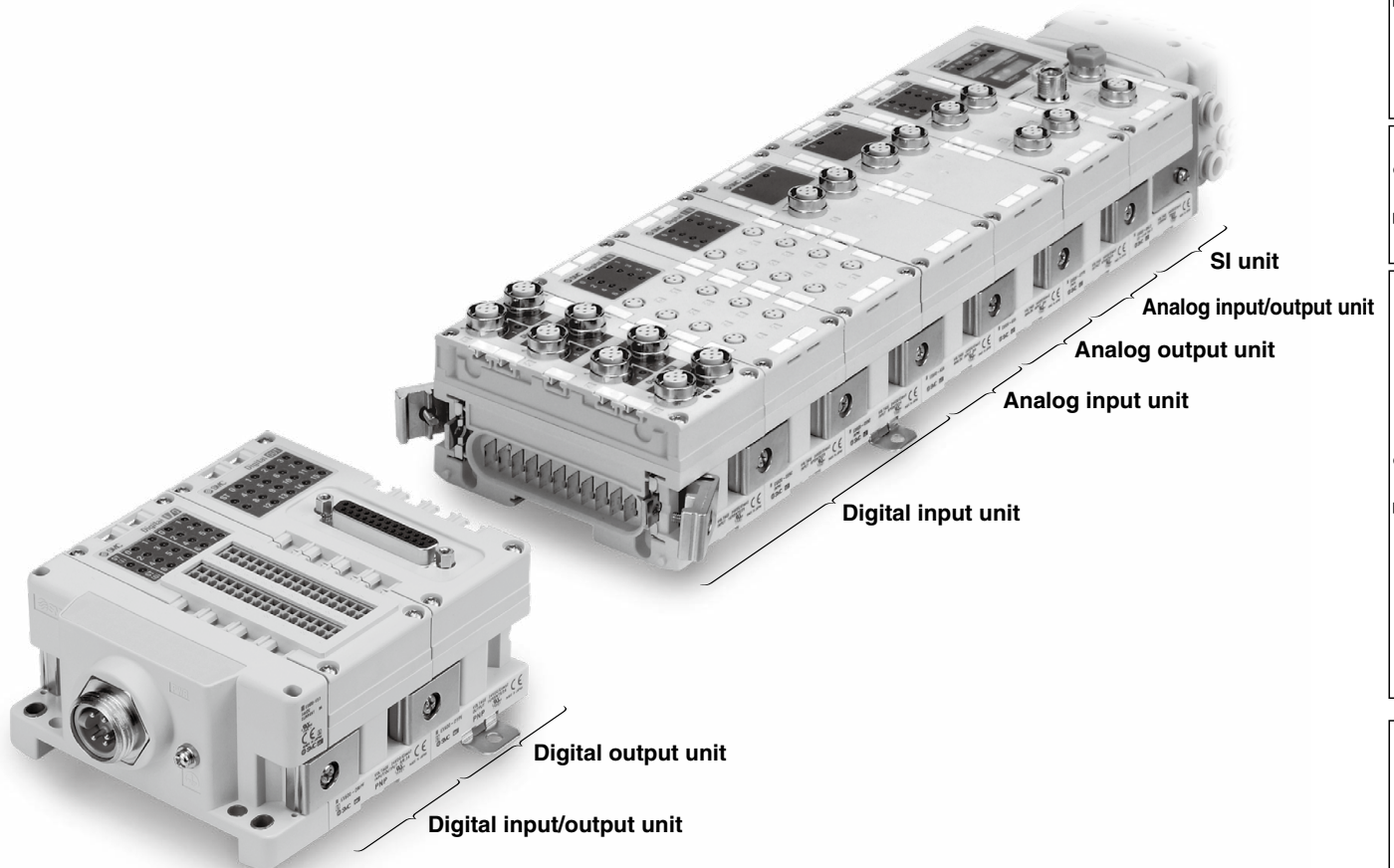


# Fieldbus System For Input/Output

# EX600 Series



## Parts Structure

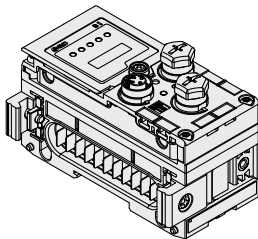


Type 1	EX260
Type 2	EX500
Type 3	EX600
Type 1	EX245
Type 2	EX250
Type 1	EX120/121/122
Type 2	EX140
Type 1	EX180
Type 2	EX510
Type 1	M8/M12
Type 2	ATEX

## How to Order

SI Unit

EX600-S PR1A-



### Specifications

Symbol	Protocol	Output type	Note
PR1A	PROFIBUS DP	PNP (Negative common)	—
PR2A		NPN (Positive common)	—
DN1A	DeviceNet™	PNP (Negative common)	—
DN2A		NPN (Positive common)	—
MJ1	CC-Link	PNP (Negative common)	—
MJ2		NPN (Positive common)	—
EN1	EtherNet/IP™	PNP (Negative common)	—
EN2		NPN (Positive common)	—
EN3		PNP (Negative common)	2 ports
EN4		NPN (Positive common)	2 ports
EC1	EtherCAT	PNP (Negative common)	—
EC2		NPN (Positive common)	—
PN1	PROFINET	PNP (Negative common)	—
PN2		NPN (Positive common)	—

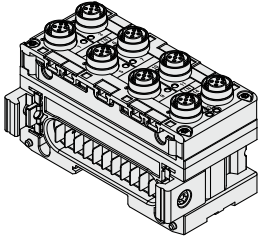
• Made to Order  
(Refer to page 128.)

MRP (PROFINET)
Ethernet POWERLINK

# EX600 Series

## How to Order

### Digital Input Unit



## EX600-DX P D

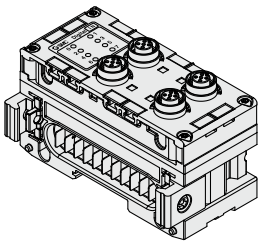
#### Input type

Symbol	Description
P	PNP
N	NPN

#### Number of Inputs, Open-circuit detection, and Connector

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

### Digital Output Unit



## EX600-DY P B

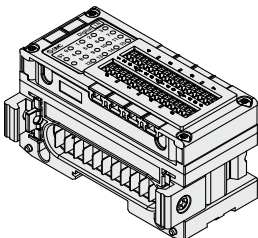
#### Output type

Symbol	Description
P	PNP
N	NPN

#### Number of Outputs and Connector

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

### Digital Input/Output Unit



## EX600-DM P F

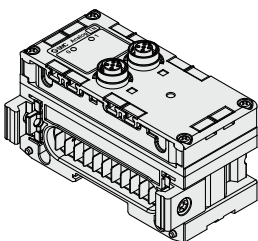
#### Input/Output type

Symbol	Description
P	PNP
N	NPN

#### Number of Inputs/Outputs and Connector

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

### Analog Input Unit



## EX600-AX A

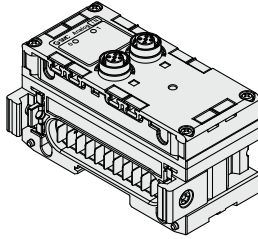
#### Analog input

#### Number of Input channels and Connector

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

How to Order

Analog Output Unit



**EX600-AY A**

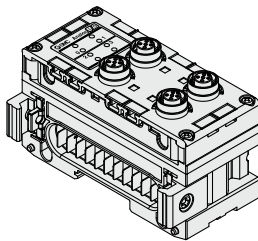
Analog output

Number of Output channels and Connector

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

Type 1  
EX260  
EX123/124/126

Analog Input/Output Unit



**EX600-AM B**

Analog input/output

Number of Input/Output channels and Connector

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

Type 2  
EX500  
EX600

End Plate (D side)

**EX600-ED 2-2**

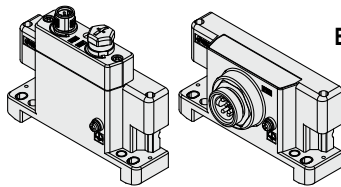
End plate

End plate mounting position: D side

Power supply connector

Symbol	Power supply connector	Specifications
2	M12 (5 pins) B-coded	IN
3	7/8 inch (5 pins)	IN
4	M12 (4/5 pins) A-coded*1	IN/OUT
5	M12 (4/5 pins) A-coded*1	IN/OUT

\*1 The pin layout for "4" and "5" pin connector is different.  
Refer to the dimensions on page 113.



For M12

For 7/8 inch

Mounting method

Symbol	Description	Note
Nil	Without DIN rail mounting bracket	—
2	With DIN rail mounting bracket	For SV, S0700, VQC series
3	With DIN rail mounting bracket	For SY series

\* When the end plate (U side) is used, the symbol for the mounting method must be the same as the D side.

EX600-ED4/5 are not yet UL-compatible.

Type 3  
EX245  
EX250

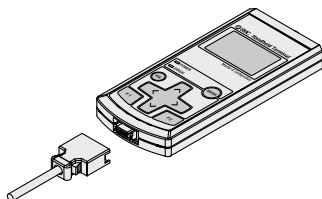
Handheld Terminal

**EX600-HT1A-3**

Version

Cable length

Symbol	Description
Nil	No cable
1	1 m
3	3 m



Handheld terminals are not yet UL-compatible.

Type 1  
EX120/121/122  
EX140

Type 2  
EX180

Type 2  
EX510

M8/M12

ATEX



# EX600 Series

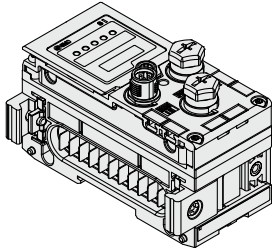
## Specifications

### All Units Common Specifications

Environmental resistance	<b>Operating temperature range</b>	Operating: -10 to 50°C, Stored: -20 to 60°C
	<b>Operating humidity range</b>	35 to 85% RH (No condensation)
	<b>Withstand voltage*1</b>	500 VAC for 1 minute between external terminals and FE
	<b>Insulation resistance*1</b>	500 VDC, 10 MΩ or more between external terminals and FE

\*1 Except handheld terminals

### SI Unit (EX600-SPR□A)

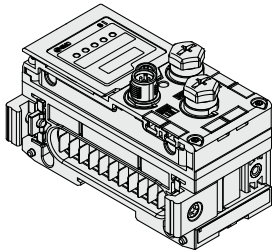


EX600-SPR□A

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

\*2 The setting file can be downloaded from the SMC website, <http://www.smcworld.com>

### SI Unit (EX600-SDN□A)

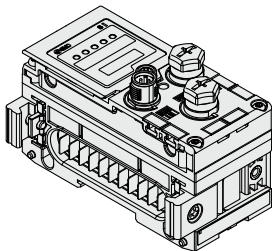


EX600-SDN□A

Model		EX600-SDN1A	EX600-SDN2A
Communication	<b>Protocol</b>	DeviceNet™: Volume 1 (Edition 2.1), Volume 3 (Edition 1.1)	
	<b>Device type</b>	Group 2 Only Server	
	<b>Communication speed</b>	125/250/500 kbps	
	<b>Configuration file</b>	EDS file*3	
	<b>Occupation area (Number of inputs/outputs)</b>	Max. (512 inputs/512 outputs)	
	<b>Applicable messages</b>	Duplicate MAC ID Check Message, Group 2 Only Unconnected Explicit Message Explicit Message (Group 2), Poll I/O Message (Predefined M/S Connection set)	
<b>Applicable function</b>		QuickConnect™	
<b>DeviceNet™ power supply</b>		11 to 25 VDC (Current consumption 50 mA or less)	
<b>Internal current consumption (Power supply for Control/Input)</b>		55 mA or less	
Output	<b>Output type</b>	Source/PNP (Negative common)	Sink/NPN (Positive common)
	<b>Number of outputs</b>	32 outputs (8/16/24/32 outputs selectable)	
	<b>Load</b>	Solenoid valve with surge voltage suppressor 24 VDC, 1.5 W or less (SMC)	
	<b>Power supply</b>	24 VDC, 2 A	
	<b>Fail safe</b>	HOLD/CLEAR/Forced power ON	
	<b>Protection</b>	Short-circuit protection	
<b>Enclosure</b>		IP67 (Manifold assembly)	
<b>Standards</b>		CE marking, UL (CSA), RoHS compliant	
<b>Weight</b>		300 g	

\*3 The setting file can be downloaded from the SMC website, <http://www.smcworld.com>

### SI Unit (EX600-SMJ□)

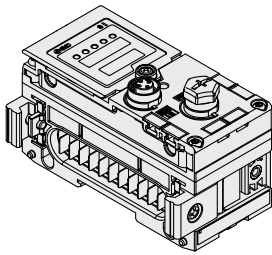


EX600-SMJ□

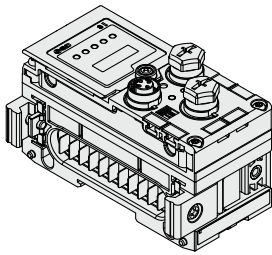
Model		EX600-SMJ1	EX600-SMJ2
Communication	<b>Protocol</b>	CC-Link (Ver. 1.10, Ver. 2.00)	
	<b>Station type</b>	Remote Device Station	
	<b>Communication speed</b>	156/625 kbps 2.5/5/10 Mbps	
	<b>Configuration file</b>	CSP+ file*4	
	<b>Occupation area (Number of inputs/outputs)</b>	Max. (512 inputs/512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

\*4 The setting file can be downloaded from the SMC website, <http://www.smcworld.com>

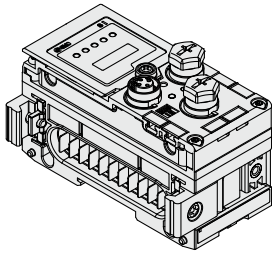
**Specifications**



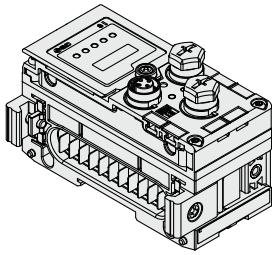
EX600-SEN1/2



EX600-SEN3/4



EX600-SEC□



EX600-SPN□

**SI Unit (EX600-SEN□)**

Model		EX600-SEN1	EX600-SEN2	EX600-SEN3	EX600-SEN4
Communication	Number of communication ports	1 port		2 ports	
	Protocol	EtherNet/IP™ (Conformance version: Composite 6)		EtherNet/IP™ (Conformance version: Composite 11)	
	Communication speed	10/100 Mbps			
	Communication method	Full duplex/Half duplex			
	Configuration file	EDS file*1			
	Occupation area (Number of inputs/outputs)	Max. (512 inputs/512 outputs)			
	IP address setting range	SI Unit switch settings: 192.168.0 or 1.1 to 254 Through DHCP server: Optional address			
Device information	Vendor ID: 7 (SMC Corporation)	Vendor ID: 7 (SMC Corporation)		Vendor ID: 7 (SMC Corporation)	
	Device type: 12 (Communication Adapter) Product code: 126	Device type: 12 (Communication Adapter) Product code: 203		Device type: 12 (Communication Adapter) Product code: 203	
Applicable function	—		QuickConnect™ DLR Web server function		
Internal current consumption	120 mA or less				
Output	Output type	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)
	Number of outputs	32 outputs (8/16/24/32 outputs selectable)		32 outputs	
	Load	Solenoid valve with surge voltage suppressor 24 VDC, 1.5 W or less (SMC)		Solenoid valve with surge voltage suppressor 24 VDC, 1.0 W or less (SMC)	
	Power supply	24 VDC, 2 A			
	Fail safe	HOLD/CLEAR/Forced power ON			
	Protection	Short-circuit protection			
	Enclosure	IP67 (Manifold assembly)			
Standards	CE marking, UL (CSA), RoHS compliant				
Weight	300 g				

\*1 The setting file can be downloaded from the SMC website, <http://www.smcworld.com>

**SI Unit (EX600-SEC□)**

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

\*2 The setting file can be downloaded from the SMC website, <http://www.smcworld.com>

**SI Unit (EX600-SPN□)**

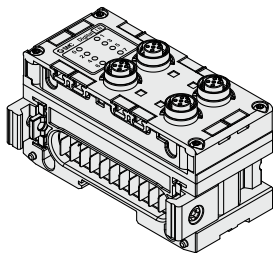
Model		EX600-SPN1	EX600-SPN2
Communication	Protocol	PROFINET IO (PROFINET RT)	
	Communication speed	100 Mbps	
	Configuration file	GSDML file*3	
	Occupation area (Number of inputs/outputs)	Max. (512 inputs/512 outputs)	
	Applicable function	Fast Start Up	
Internal current consumption (Power supply for Control/Input)	120 mA or less		
Output	Output type	Source/PNP (Negative common)	Sink/NPN (Positive common)
	Number of outputs	32 outputs	
	Load	Solenoid valve with surge voltage suppressor 24 VDC, 1.0 W or less (SMC)	
	Power supply	24 VDC, 2 A	
	Fail safe	HOLD/CLEAR/Forced power ON	
Protection	Short-circuit protection		
Enclosure	IP67 (Manifold assembly)		
Standards	CE marking, UL (CSA), RoHS compliant		
Weight	300 g		

\*3 The setting file can be downloaded from the SMC website, <http://www.smcworld.com>

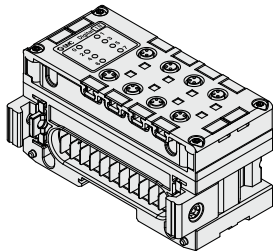
Type 1	EX260
Type 1	EX123/124/126
Type 2	EX500
Type 2	EX600
Type 3	EX245
Type 3	EX250
Type 1	EX120/121/122
Type 1	EX140
Type 1	EX180
Type 2	EX510
Type 2	M8/M12
Type 2	ATEX

# EX600 Series

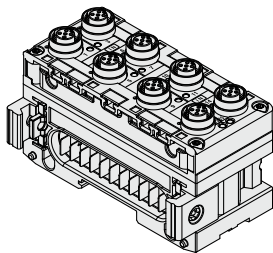
## Specifications



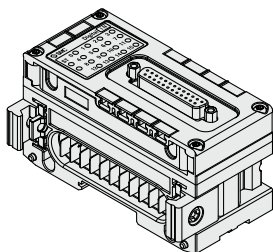
EX600-DX□B



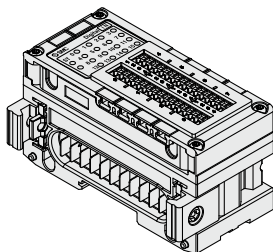
EX600-DX□C



EX600-DX□D



EX600-DX□E



EX600-DX□F

### Digital Input Unit

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

\*1 M12 (4-pin) connector can be connected.

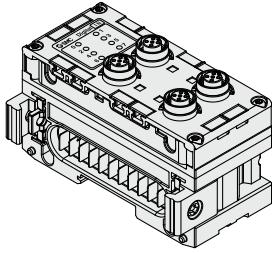
\*2 Function only applies to the EX600-DX□C1.

\*3 When connecting the M8 plug connector, the tightening torque must be 0.2 N·m ±10%. If tightened with an excessive tightening torque, this may cause the connector thread of the unit to break.

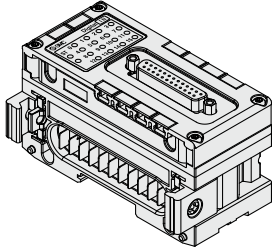
Model		EX600-DXPE	EX600-DXNE	EX600-DXPF	EX600-DXNF	
Input	Input type	PNP	NPN	PNP	NPN	
	Input connector	D-sub socket (25 pins) Lock screw: No.4-40 UNC		Spring type terminal block (32 pins)		
	Number of inputs	16 inputs		16 inputs (2 inputs x 8 blocks)		
	Supplied voltage	24 VDC				
	Max. supplied current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



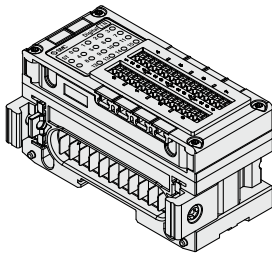
**Specifications**



EX600-DY□B



EX600-DY□E  
EX600-DM□E



EX600-DY□F  
EX600-DM□F

**Digital Output Unit**

Model	EX600-DYPB	EX600-DYNB	EX600-DYPE	EX600-DYNE	EX600-DYPF	EX600-DYNF
<b>Output type</b>	PNP	NPN	PNP	NPN	PNP	NPN
<b>Output connector</b>	M12 (5-pin) socket*1		D-sub socket (25 pins) Lock screw: No.4-40 UNC		Spring type terminal block (32 pins)	
<b>Number of outputs</b>	8 outputs (2 outputs/Connector)		16 outputs		16 outputs (2 outputs x 8 blocks)	
<b>Supplied voltage</b>	24 VDC					
<b>Max. load current</b>	0.5 A/Output 2 A/Unit					
<b>Protection</b>	Short-circuit protection					
<b>Applicable wire</b>	—		—		0.08 to 1.5 mm <sup>2</sup> (AWG16 to 28)	
<b>Current consumption</b>	50 mA or less					
<b>Enclosure</b>	IP67 (Manifold assembly)			IP40 (Manifold assembly)		
<b>Standards</b>	CE marking, UL (CSA), RoHS compliant					
<b>Weight</b>	300 g					

\*1 M12 (4-pin) connector can be connected.

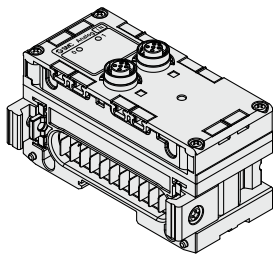
**Digital Input/Output Unit**

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

Type 1	EX260
Type 2	EX500
Type 3	EX600
Type 1	EX245
Type 1	EX250
Type 1	EX120/121/122
Type 1	EX140
Type 1	EX180
Type 2	EX510
	M8/M12
	ATEX

# EX600 Series

## Specifications



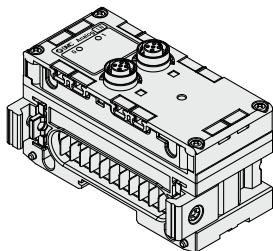
EX600-AXA

### Analog Input Unit

Model		EX600-AXA		
Input	Input type	Voltage input	Current input	
	Input connector	M12 (5-pin) socket*1		
	Input channel	2 channels (1 channel/Connector)		
	Supplied voltage	24 VDC		
	Max. supplied current	0.5 A/Connector		
	Protection	Short-circuit protection		
	Input signal range	12 bit resolution	0 to 10 V, 1 to 5 V, 0 to 5 V	0 to 20 mA, 4 to 20 mA
		16 bit resolution	-10 to 10 V, -5 to 5 V	-20 to 20 mA
	Max. rated input signal	±15 V	±22 mA*2	
	Input impedance	100 kΩ	50 Ω	
	Linearity (25°C)	±0.05% F.S.		
	Repeatability (25°C)	±0.15% F.S.		
	Absolute accuracy (25°C)	±0.5% F.S.	±0.6% F.S.	
	Current consumption	70 mA or less		
Enclosure	IP67 (Manifold assembly)			
Standards	CE marking, UL (CSA), RoHS compliant			
Weight	290 g			

\*1 M12 (4-pin) connector can be connected.

\*2 When input signal exceeds 22 mA, the protection function activates and the input signal is interrupted.



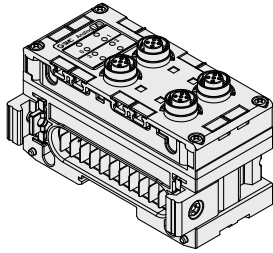
EX600-AYA

### Analog Output Unit

Model		EX600-AYA		
Output	Output type	Voltage output	Current output	
	Output connector	M12 (5-pin) socket*3		
	Output channel	2 channels (1 channel/Connector)		
	Supplied voltage	24 VDC		
	Max. load current	0.5 A/Connector		
	Protection	Short-circuit protection		
	Output signal range	12 bit resolution	0 to 10 V, 1 to 5 V, 0 to 5 V	0 to 20 mA, 4 to 20 mA
		16 bit resolution	-10 to 10 V, -5 to 5 V	-20 to 20 mA
	Load impedance	1 kΩ or more	600 Ω or less	
	Linearity (25°C)	±0.05% F.S.		
	Repeatability (25°C)	±0.15% F.S.		
	Absolute accuracy (25°C)	±0.5% F.S.	±0.6% F.S.	
	Current consumption	70 mA or less		
	Enclosure	IP67 (Manifold assembly)		
Standards	CE marking, UL (CSA), RoHS compliant			
Weight	290 g			

\*3 M12 (4-pin) connector can be connected.

**Specifications**



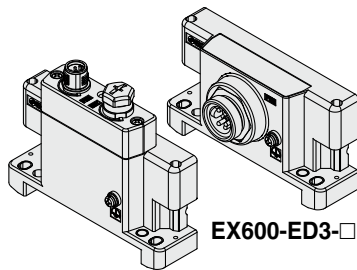
**EX600-AMB**

**Analog Input/Output Unit**

Model		<b>EX600-AMB</b>		
Input	Input type	Voltage input	Current input	
	Input connector	M12 (5-pin) socket*1		
	Input channel	2 channels (1 channel/Connector)		
	Supplied voltage	24 VDC		
	Max. supplied current	0.5 A/Connector		
	Protection	Short-circuit protection		
	Input signal range	12 bit resolution 0 to 10 V, 1 to 5 V, 0 to 5 V	0 to 20 mA, 4 to 20 mA	
	Max. rated input signal	15 V	22 mA*2	
	Input impedance	100 kΩ	250 Ω	
	Linearity (25°C)	±0.05% F.S.		
Repeatability (25°C)	±0.15% F.S.			
Absolute accuracy (25°C)	±0.5% F.S.	±0.6% F.S.		
Output	Output type	Voltage output	Current output	
	Output connector	M12 (5-pin) socket*1		
	Output channel	2 channels (1 channel/Connector)		
	Supplied voltage	24 VDC		
	Max. load current	0.5 A/Connector		
	Protection	Short-circuit protection		
	Output signal range	12 bit resolution 0 to 10 V, 1 to 5 V, 0 to 5 V	0 to 20 mA, 4 to 20 mA	
	Load impedance	1 kΩ or more	600 Ω or less	
	Linearity (25°C)	±0.05% F.S.		
	Repeatability (25°C)	±0.15% F.S.		
Absolute accuracy (25°C)	±0.5% F.S.	±0.6% F.S.		
Current consumption	100 mA or less			
Enclosure	IP67 (Manifold assembly)			
Standards	CE marking, UL (CSA), RoHS compliant			
Weight	300 g			

\*1 M12 (4-pin) connector can be connected.

\*2 When input signal exceeds 22 mA, the protection function activates and the input signal is interrupted.



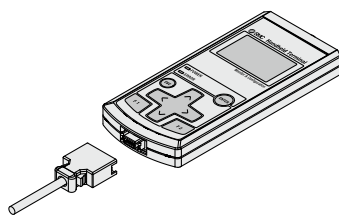
**EX600-ED2/4/5-□**

**EX600-ED3-□**

**End Plate**

Model		<b>EX600-ED2-□</b>	<b>EX600-ED3-□</b>	<b>EX600-ED4/5-□</b>	
Power specifications	Power supply connector	<b>PWR IN</b> M12 (5-pin) plug	7/8 inch (5-pin) plug	M12 (4-pin) plug	
		<b>PWR OUT</b> —	—	M12 (5-pin) plug	
	Rated voltage	Power supply for control/input	24 VDC ±10%		
		Power supply for output	24 VDC +10/-5%		
Rated current	Power supply for control/input	Max. 2 A	Max. 8 A	Max. 4 A	
	Power supply for output				
Enclosure	IP67 (Manifold assembly)				
Standards	CE marking, UL (CSA), RoHS compliant*1				
Weight	170 g	175 g	170 g		

\*1 The EX600-ED4/5-□ is not compliant with UL (CSA) standards.



**EX600-HT1A-□**

**Handheld Terminal**

Model	<b>EX600-HT1A-□</b>
Power supply	Power supplied from SI unit connector (24 VDC)
Current consumption	50 mA or less
Display	LCD with backlight
Connection cable	Handheld terminal cable (1 m ... EX600-AC010-1, 3 m ... EX600-AC030-1)
Enclosure	IP20
Standards	CE marking, RoHS compliant
Weight	160 g

Type 1  
EX260  
EX123/124/126  
EX500  
EX600  
EX245  
EX250  
EX120/121/122  
EX140  
EX180  
EX510  
M8/M12  
ATEX

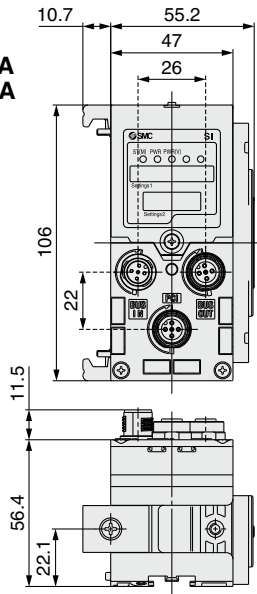


# EX600 Series

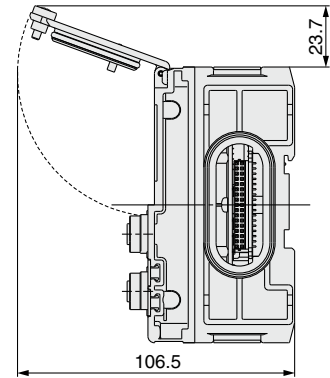
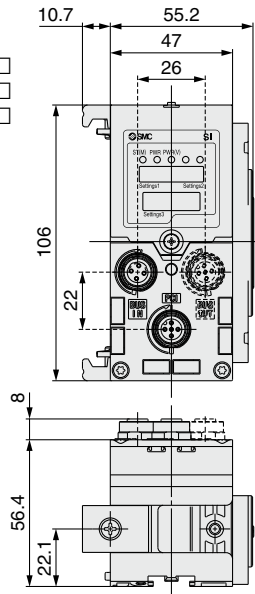
## Dimensions

SI Unit

EX600-SPR□A  
EX600-SDN□A  
EX600-SMJ□

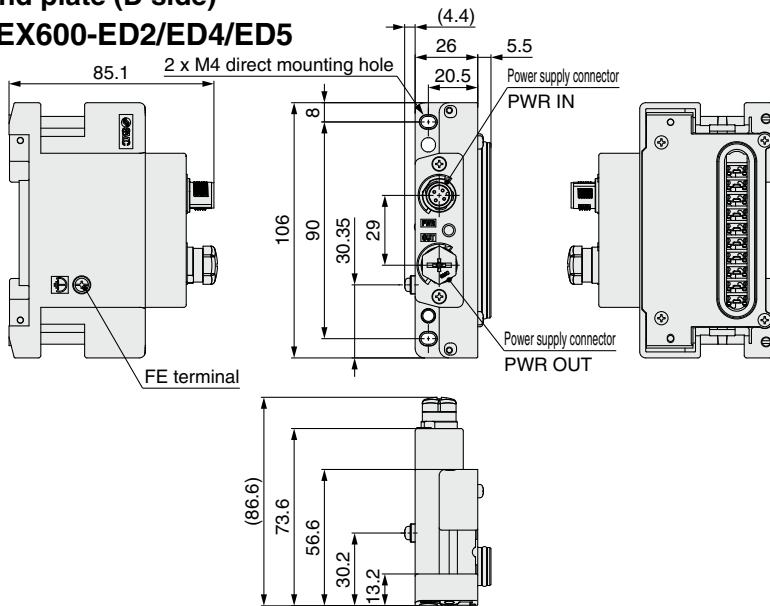


EX600-SEN□  
EX600-SEC□  
EX600-SPN□

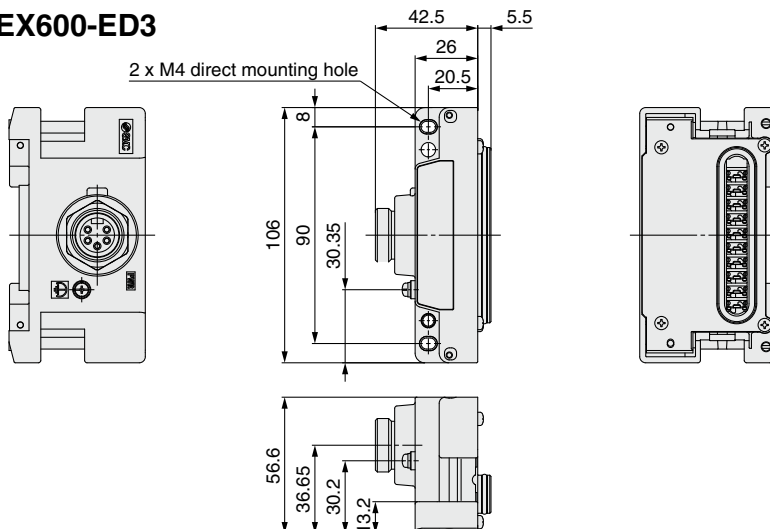


## End plate (D side)

### EX600-ED2/ED4/ED5



### EX600-ED3



## EX600-ED2

Power supply connector PWR IN: M12 5-pin plug, B-coded

Configuration	Pin no.	Description
	1	24 V (for output)
	2	0 V (for output)
	3	24 V (for control/input)
	4	0 V (for control/input)
	5	FE

Power supply connector PWR IN: M12 4-pin plug, A-coded

Configuration	EX600-ED4 (Pin arrangement 1)		EX600-ED5 (Pin arrangement 2)	
	Pin no.	Description	Pin no.	Description
	1	24 V (for control/input)	1	24 V (for output)
	2	24 V (for output)	2	0 V (for output)
	3	0 V (for control/input)	3	24 V (for control/input)
	4	0 V (for output)	4	0 V (for control/input)

Power supply connector PWR OUT: M12 5-pin socket, A-coded

Configuration	EX600-ED4 (Pin arrangement 1)		EX600-ED5 (Pin arrangement 2)	
	Pin no.	Description	Pin no.	Description
	1	24 V (for control/input)	1	24 V (for output)
	2	24 V (for output)	2	0 V (for output)
	3	0 V (for control/input)	3	24 V (for control/input)
	4	0 V (for output)	4	0 V (for control/input)
	5	Unused	5	Unused

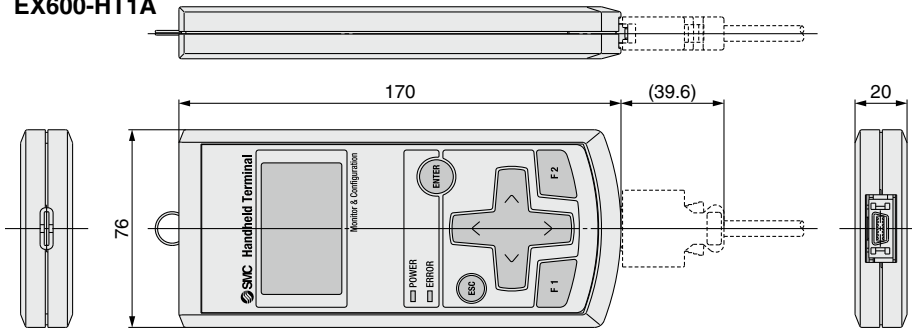
Power supply connector PWR: 7/8 inch 5-pin plug

Configuration	Pin no.	Description
	1	0 V (for output)
	2	0 V (for control/input)
	3	FE
	4	24 V (for control/input)
	5	24 V (for output)

## Dimensions

### Handheld Terminal

EX600-HT1A

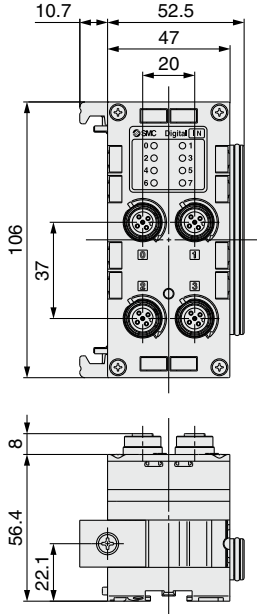


Type 2	Type 3	Type 1	Type 1	Type 2	Type 1
EX510	EX250	EX245	EX600	EX500	EX260
M8/M12				EX123/124/126	EX120/121/122
ATEX					EX140
					EX180

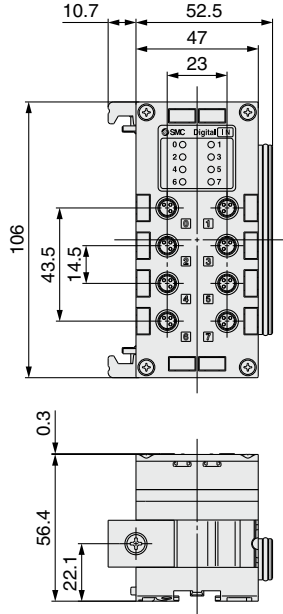
## Dimensions

### Digital Unit

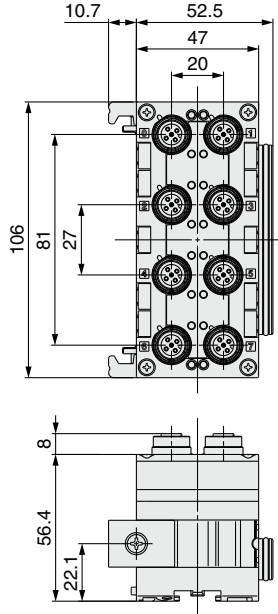
EX600-DX□B  
EX600-DY□B



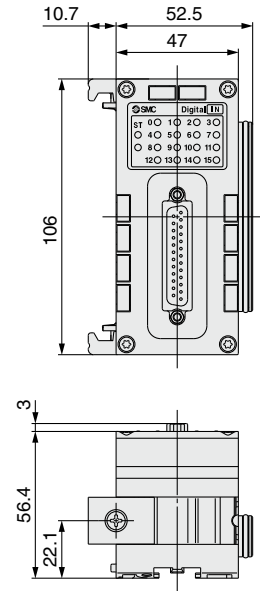
EX600-DX□C□



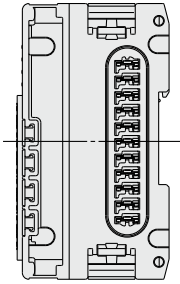
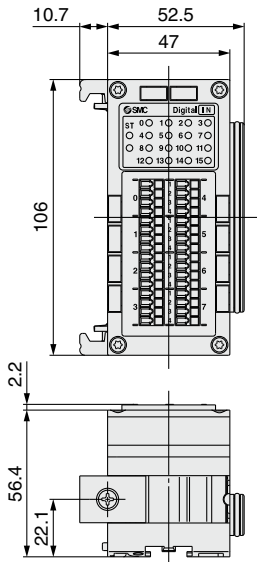
EX600-DX□D



EX600-DX□E  
EX600-DY□E  
EX600-DM□E

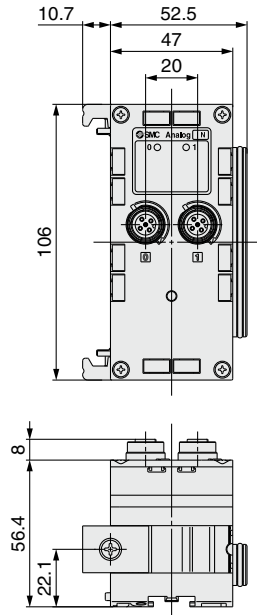


EX600-DX□F  
EX600-DY□F  
EX600-DM□F

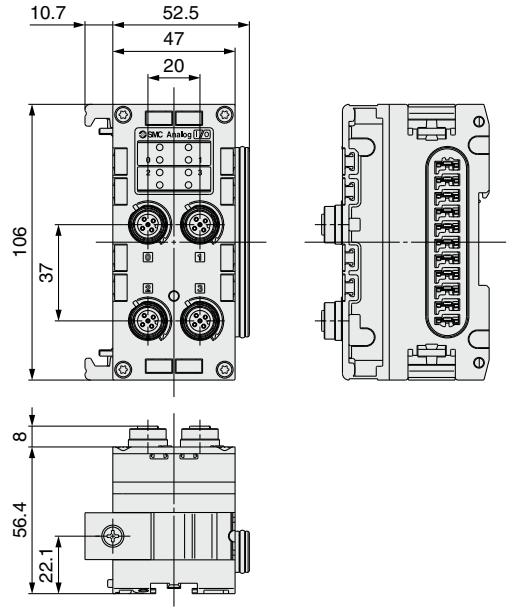


### Analog Unit

EX600-AXA  
EX600-AYA



EX600-AMB



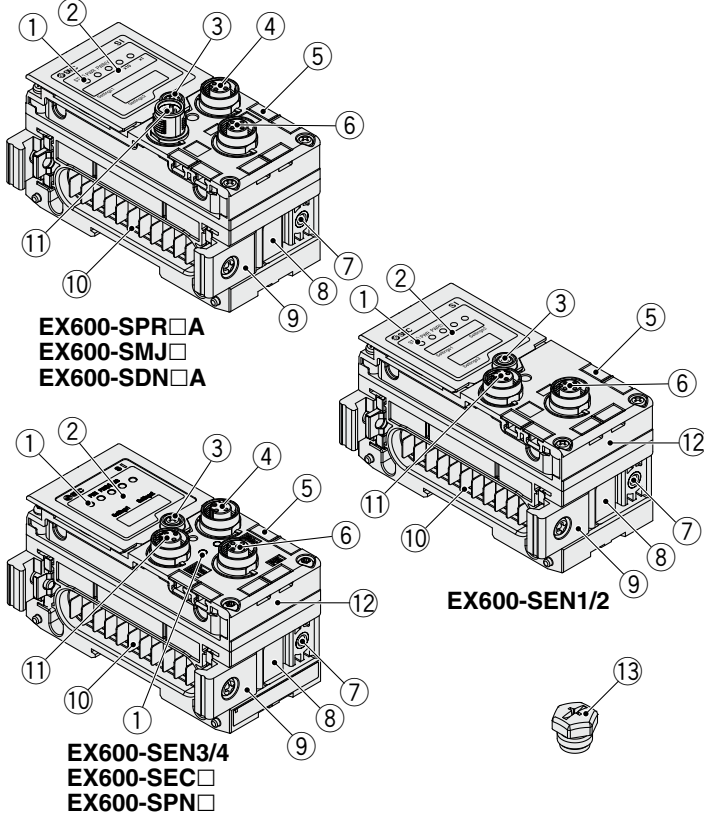
Type 1	EX260
Type 2	EX123/124/126
Type 3	EX500
	EX600
	EX245
	EX250
Type 1	EX120/121/122
	EX140
Type 2	EX180
	EX510
	M8/M12
	ATEX



# EX600 Series

## Parts Description

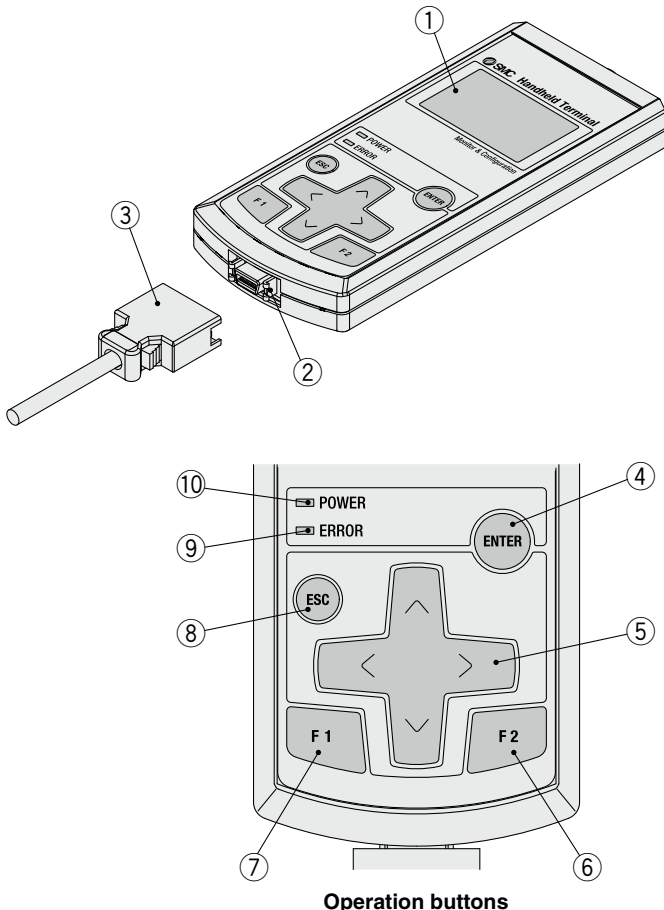
### SI Unit



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

\*1 MAC address name plate is not provided on the EX600-SEC□.

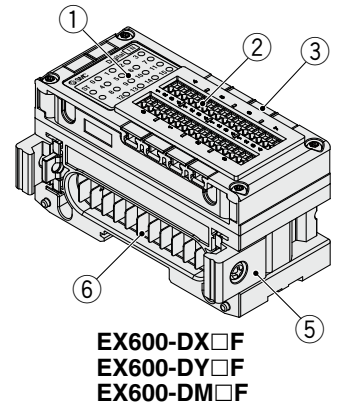
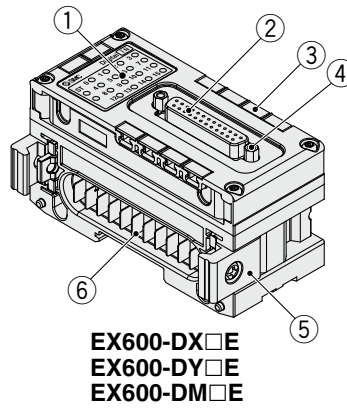
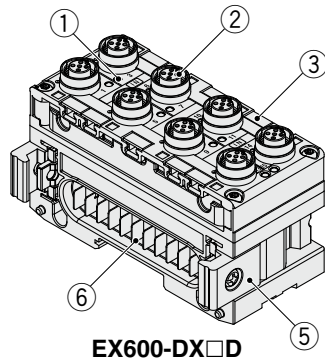
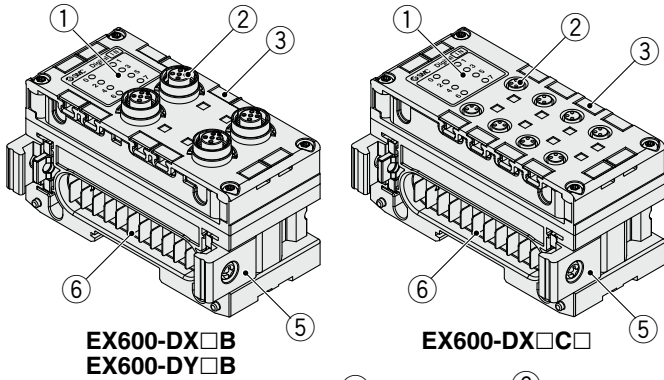
### Handheld Terminal



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

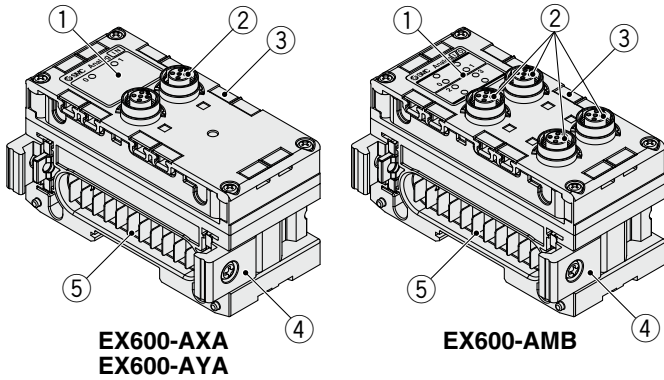
## Parts Description

### Digital Unit



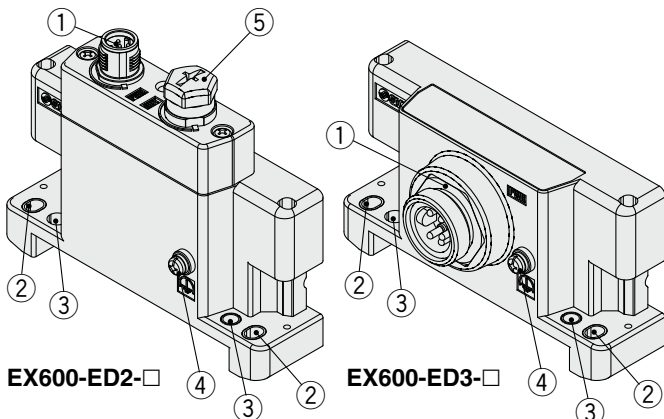
No.	Name	Use
1	<b>Status indication LED</b>	Displays unit status
2	<b>Connector</b>	Connects with input or output devices (Only the EX600-D□□B and EX600-DX□D are SPEEDCON compatible.)
3	<b>Marker groove</b>	Can be used to mount a marker
4	<b>Lock screw</b>	Secures the D-sub connector in place (No.4-40 UNC)
5	<b>Joint bracket</b>	Links units to one another
6	<b>Connector for unit (Plug)</b>	Transmits signals to the neighboring unit and supplies power

### Analog Unit



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

### End Plate



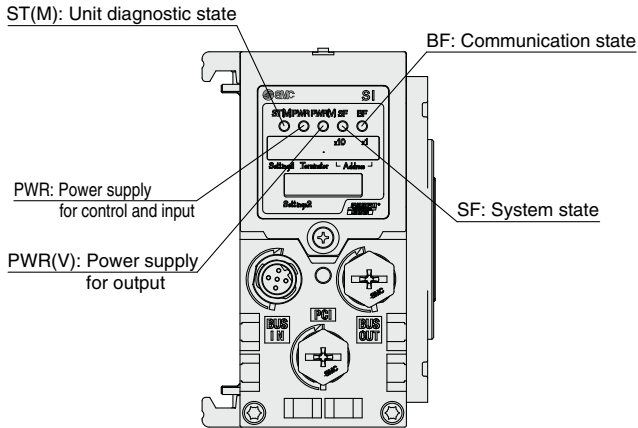
No.	Name	Use
1	<b>Power connector</b>	Supplies power to the unit and/or input/output device (Only the EX600-ED2-□ is SPEEDCON compatible.)
2	<b>Fixing hole for direct mounting</b>	Connects directly to equipment
3	<b>Fixing hole for DIN rail</b>	Converts to manifold or for DIN rail mounting
4	<b>FE terminal</b>	Used for grounding Ground this terminal securely to improve noise immunity.
5	<b>Connector (Unused)</b>	This connector has not yet been used. Do not remove the seal cap.

Type 1  
EX260  
EX123/124/126  
EX500  
EX600  
EX245  
EX250  
EX120/121/122  
EX140  
EX180  
EX510  
M8/M12  
ATEX

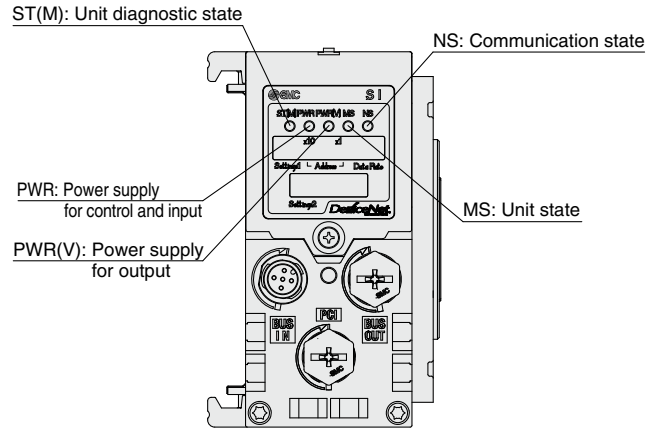
# EX600 Series

## LED Indicator

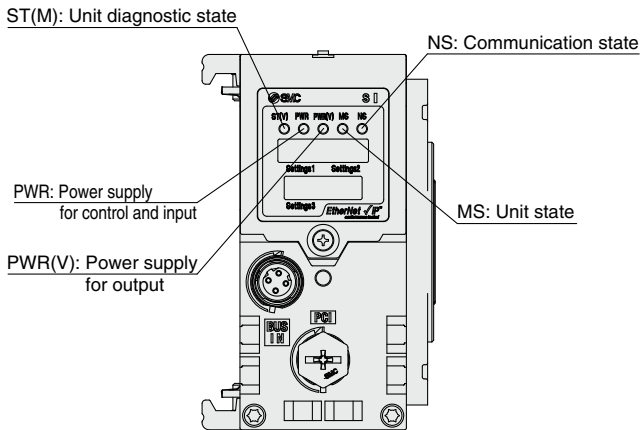
### EX600-SPR□A



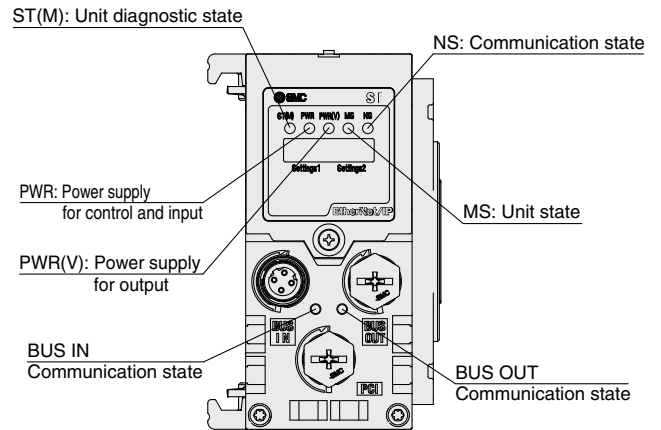
### EX600-SDN□A



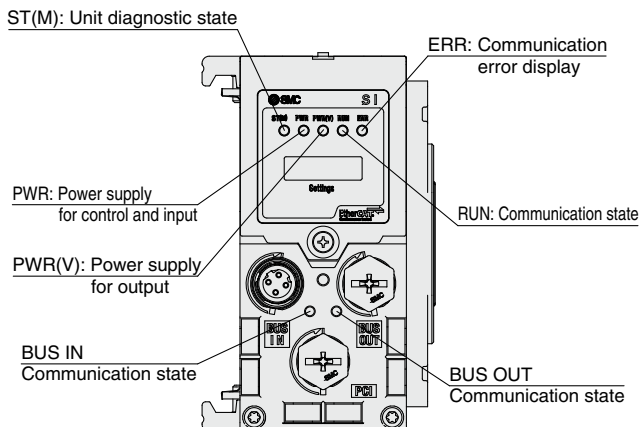
### EX600-SEN1/SEN2



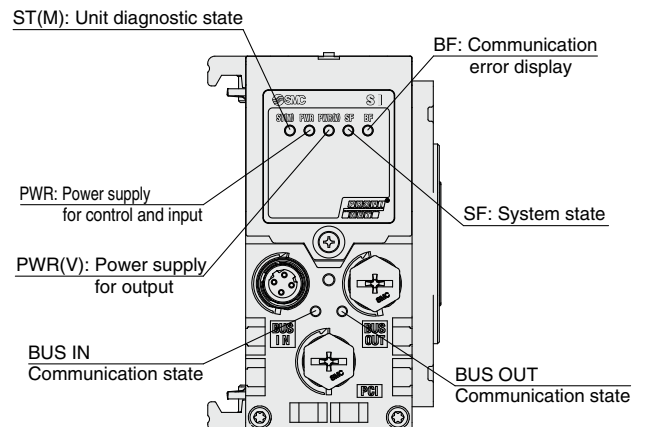
### EX600-SEN3/SEN4



### EX600-SEC□

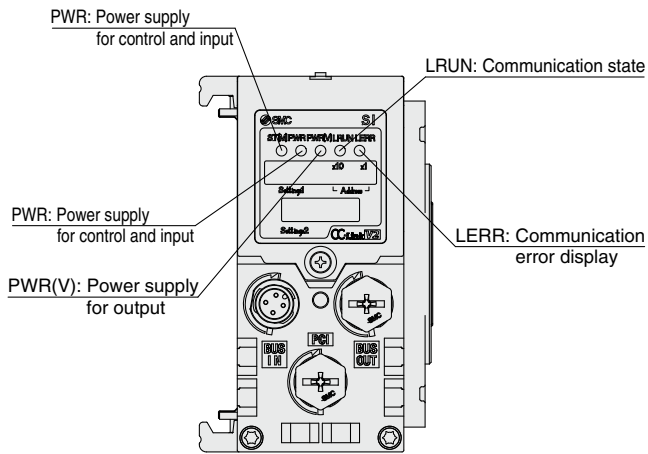


### EX600-SPN□

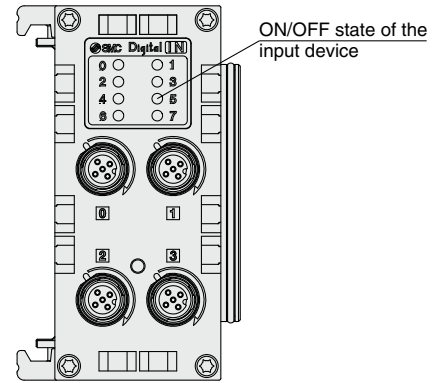


## LED Indicator

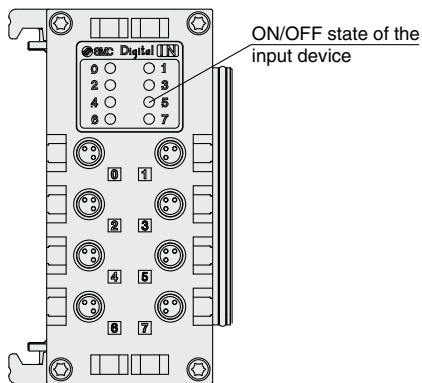
### EX600-SMJ□



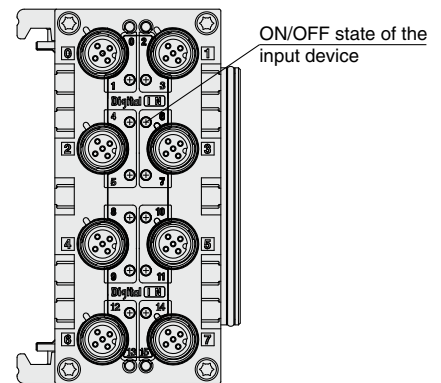
### EX600-DX□B



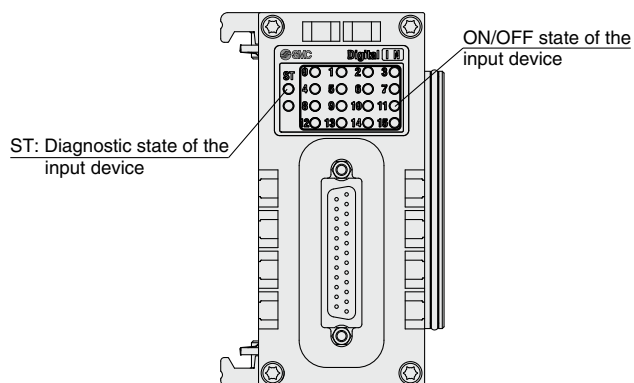
### EX600-DX□C



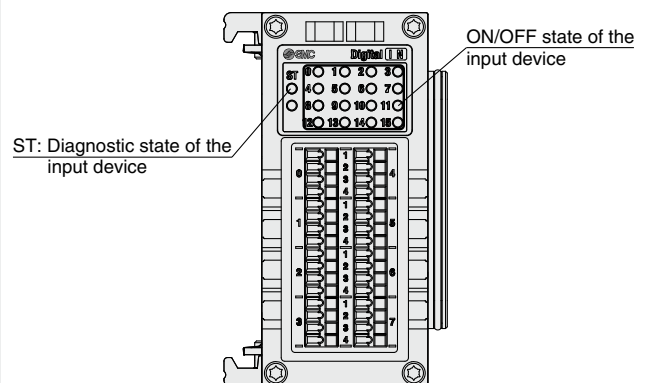
### EX600-DX□D



### EX600-DX□E



### EX600-DX□F



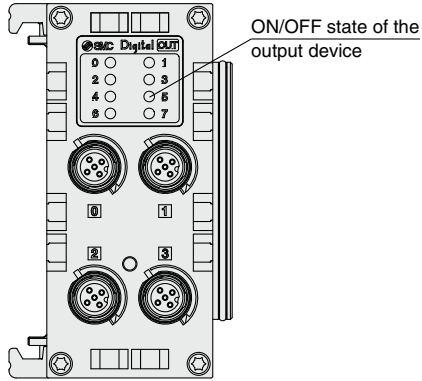
Type 1	EX260
Type 2	EX500
Type 3	EX245
Type 1	EX140
Type 2	EX510
	EX180
	M8/M12
	ATEX
	EX600
	EX123/124/126
	EX120/121/122



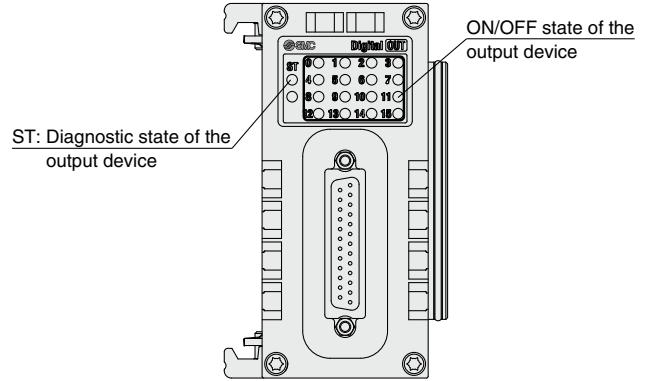
# EX600 Series

## LED Indicator

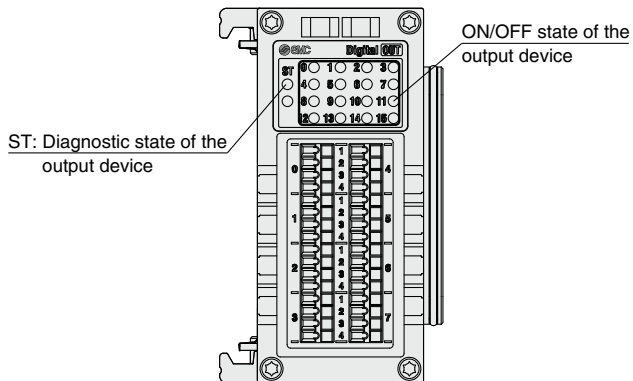
### EX600-DY□B



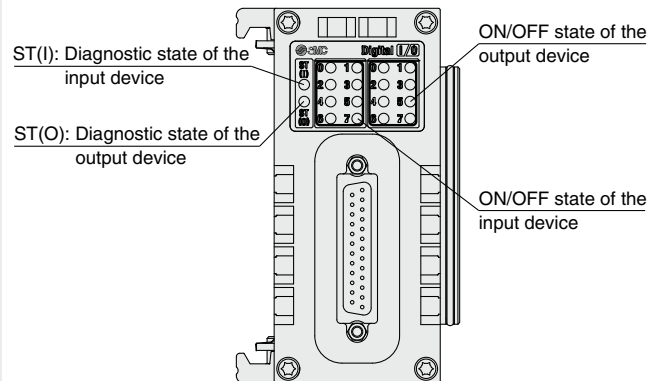
### EX600-DY□E



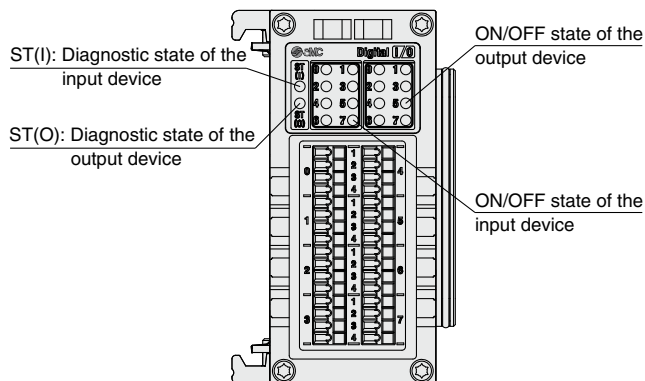
### EX600-DY□F



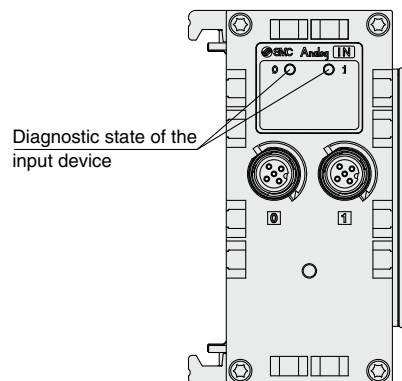
### EX600-DM□E



### EX600-DM□F

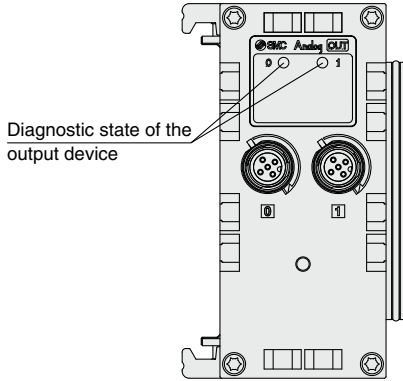


### EX600-AXA

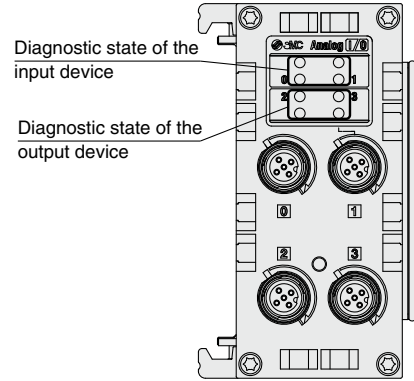


## LED Indicator

### EX600-AYA

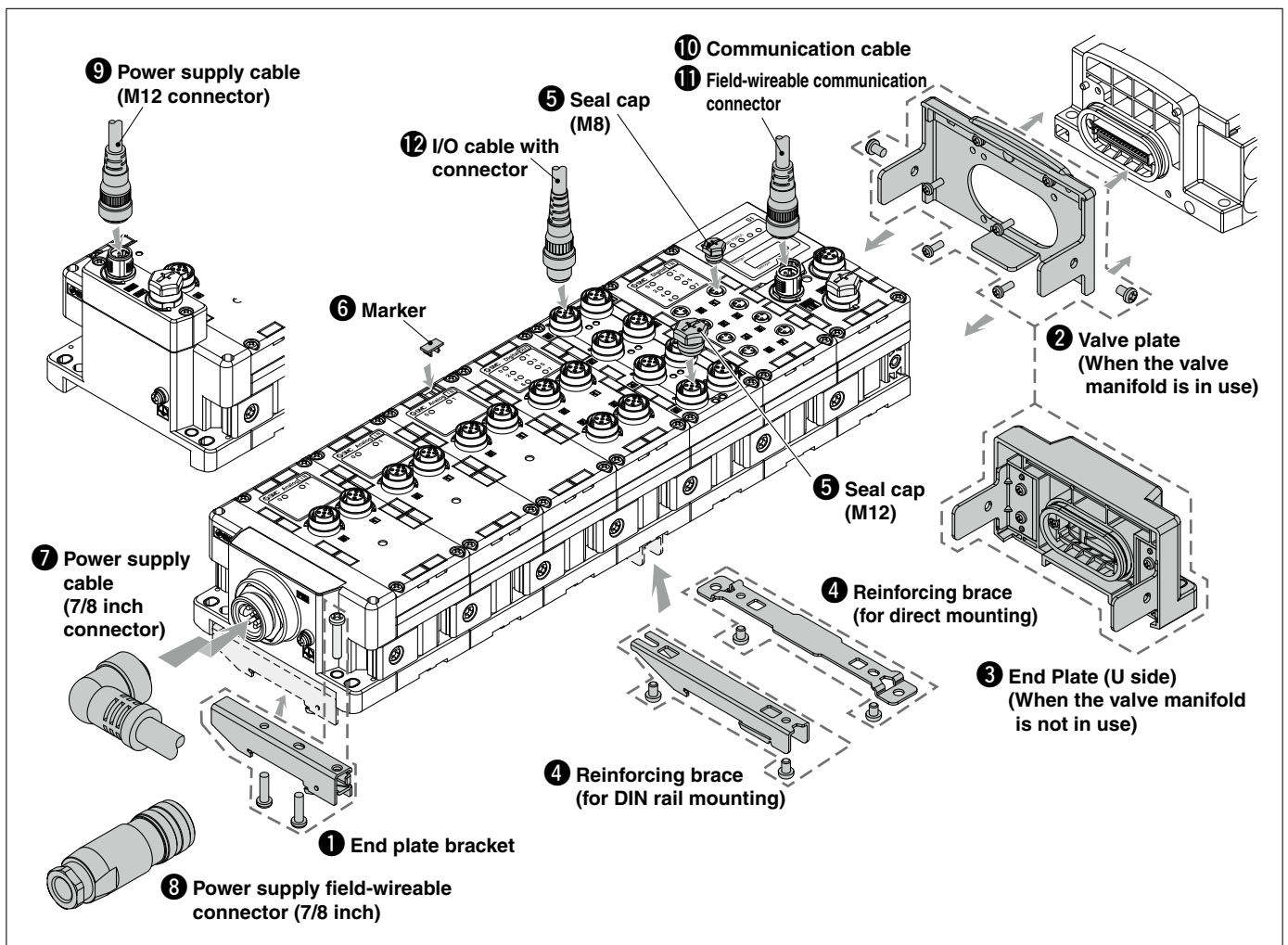


### EX600-AMB



	Type 1	EX260
	Type 2	EX123/124/126
	Type 2	EX500
	Type 3	EX600
	Type 3	EX245
	Type 3	EX250
	Type 1	EX120/121/122
	Type 1	EX140
	Type 1	EX180
	Type 2	EX510
		M8/M12
		ATEX

# EX600 Series 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.

### EX600-ZMA3

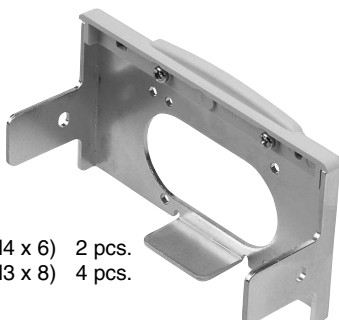
(Specialized for SY series)

#### Enclosed parts

Round head screw with washer (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.

### EX600-ZMV2

(Specialized for SY series)



#### Enclosed parts

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

### ③ End Plate (U side)

The end plate is for use when the manifold valve is not connected.

EX600-**E U 1 - 2**

● **Mounting method**

Symbol	Description
Nil	Without DIN rail mounting bracket
2	With DIN rail mounting bracket
3	With DIN rail mounting bracket

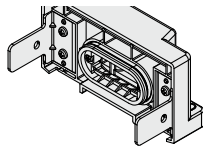
\* Select in accordance with the symbol for the end plate (D side) mounting method.

● **Specifications**

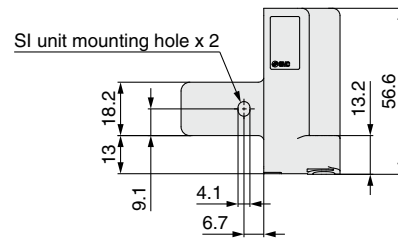
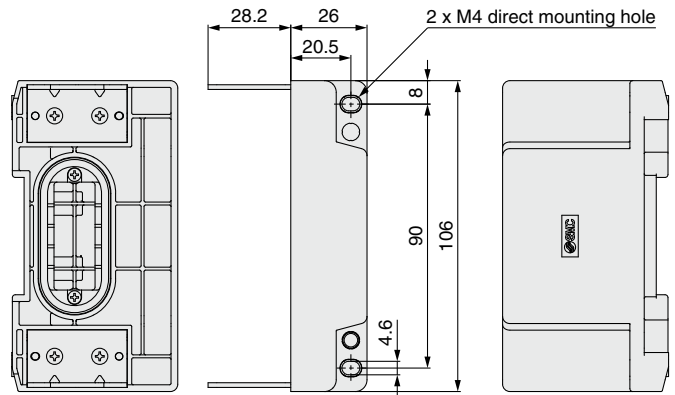
Symbol	Specifications
1	Waterproof cover

● **End plate mounting position: U side**

● **End plate**



EX600-EU1



**Enclosed parts**

Round head screw (M4 x 5) 2 pcs.

### ④ Reinforcing Brace

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

\* Be sure to attach this bracket to prevent connection failure between the units caused by deflection.

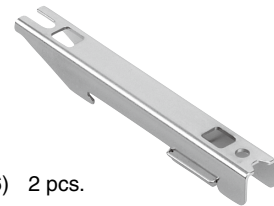
For direct mounting  
**EX600-ZMB1**



**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.

### ⑤ Seal Cap (10 pcs.)

Be sure to mount a seal cap on any unused I/O connectors. Otherwise, the specified enclosure cannot be maintained.

**EX9-AWES**  
For M8



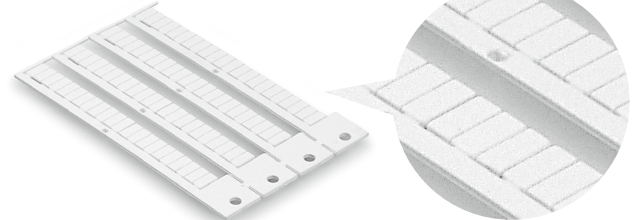
**EX9-AWTS**  
For M12



### ⑥ 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



Type 1	EX260
Type 1	EX123/124/126
Type 2	EX500
Type 2	EX600
Type 3	EX245
Type 3	EX250
Type 1	EX120/121/122
Type 1	EX140
Type 1	EX180
Type 2	EX510
Type 2	M8/M12
Type 2	ATEX



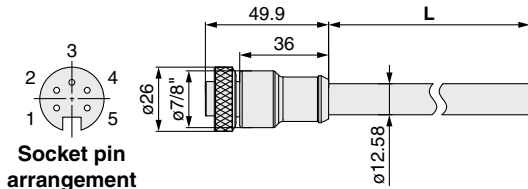
# EX600 Series

## ⑦ Power Supply Cable (7/8 inch connector)

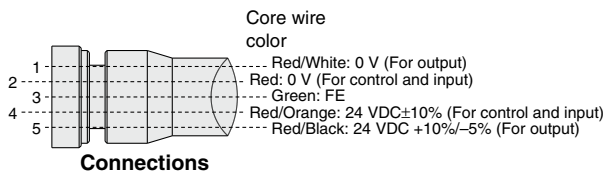
- PCA-1558810 Straight 2 m
- PCA-1558823 Straight 6 m
- PCA-1558836 Right angle 2 m
- PCA-1558849 Right angle 6 m



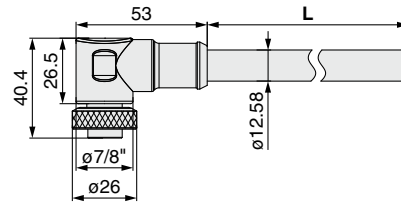
### Straight connector type



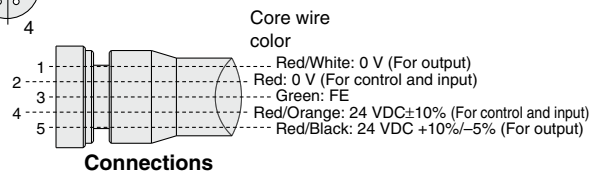
Socket pin arrangement



### Angle connector type



Socket pin arrangement



Item	Specifications
Cable O.D.	12.58 mm
Conductor nominal cross section	1.5 mm <sup>2</sup> /AWG16
Wire O.D. (Including insulator)	2.35 mm
Min. bending radius (Fixed)	110 mm

## ⑧ Power Supply Field-wireable Connector (7/8 inch)

- PCA-1578081 Socket [compatible with AWG22-16]



### Applicable Cable

Item	Specifications
Cable O.D.	12.0 to 14.0 mm
Wire gauge (Stranded wire cross section)	0.34 to 1.5 mm <sup>2</sup> AWG22 to 16

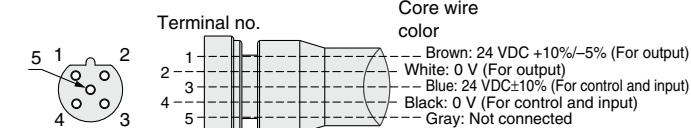
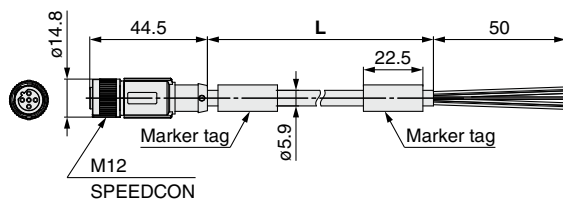
## ⑨ Power Supply Cable (M12 connector, For EX600-ED2) \* The shape of the M12 connector is B-coded (Reverse key).

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



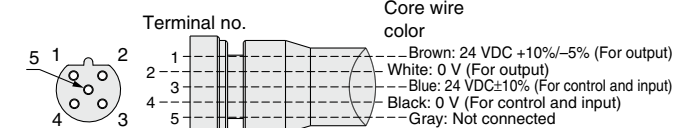
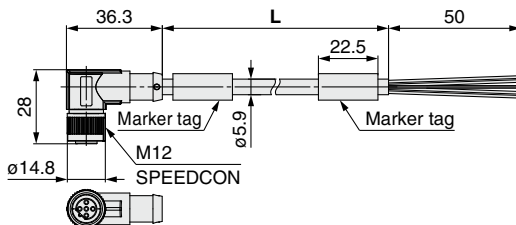
**SPEEDCON**

### Straight connector type



Socket connector pin arrangement B-coded (Reverse key)

### Angle connector type



Socket connector pin arrangement B-coded (Reverse key)

Item	Specifications
Cable O.D.	5.9 mm
Conductor nominal cross section	0.34 mm <sup>2</sup> /AWG22
Wire O.D. (Including insulator)	1.27 mm
Min. bending radius (Fixed)	59 mm

## ⑩ Power Supply Cable (M12 connector, For EX600-ED4/5) \* The shape of the M12 connector is A-coded (Reverse key).

EX500-AP **050** - **S**

Cable length (L)

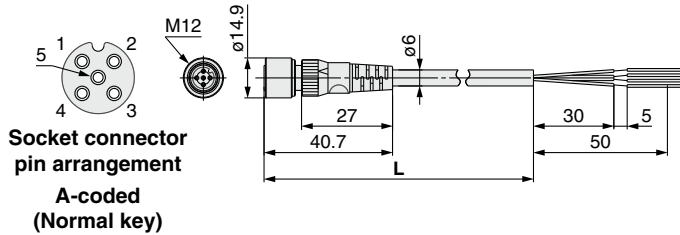
<b>010</b>	1000 mm
<b>050</b>	5000 mm

Connector specification

<b>S</b>	Straight
<b>A</b>	Angle

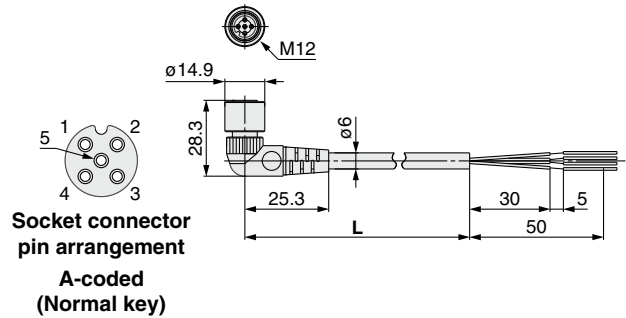


### Straight connector type

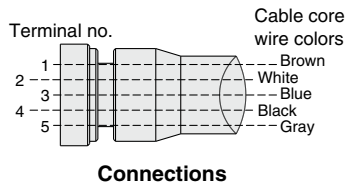


Item	Specifications
Cable O.D.	ø6 mm
Nominal cross section	0.3 mm <sup>2</sup> /AWG22
Wire diameter (Including insulator)	1.5 mm
Min. bending radius	40 mm (Fixed)

### Angle connector type



Item	Specifications
Cable O.D.	ø6 mm
Nominal cross section	0.3 mm <sup>2</sup> /AWG22
Wire diameter (Including insulator)	1.5 mm
Min. bending radius	40 mm (Fixed)

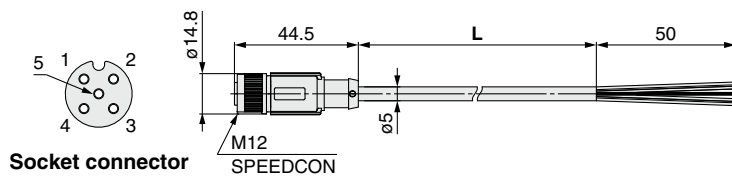


### SPEEDCON

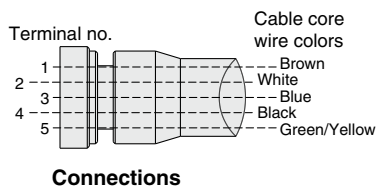
PCA- **1401804**

Cable length (L)

<b>1401804</b>	1500 mm
<b>1401805</b>	3000 mm
<b>1401806</b>	5000 mm



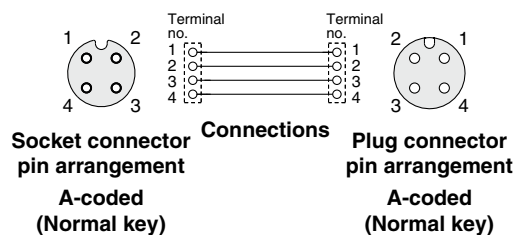
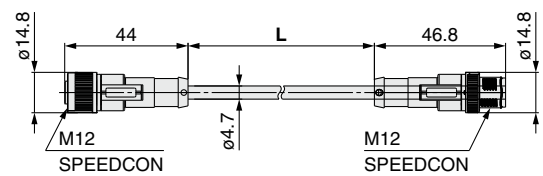
Item	Specifications
Cable O.D.	ø5 mm
Nominal cross section	0.3 mm <sup>2</sup> /AWG22
Wire diameter (Including insulator)	1.27 mm
Min. bending radius	21.7 mm (Fixed)



PCA- **1557769**

Cable length (L)

<b>1557769</b>	3000 mm
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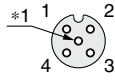
Type 1	EX260
Type 1	EX123/124/126
Type 2	EX500
Type 2	EX600
Type 3	EX245
Type 3	EX250
Type 1	EX120/121/122
Type 1	EX140
Type 1	EX180
Type 2	EX510
Type 2	M8/M12
Type 2	ATEX

# EX600 Series

## ① Communication Cable

For CC-Link

**PCA-1567720**  
(Socket)

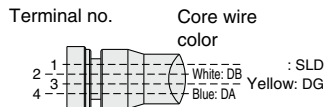
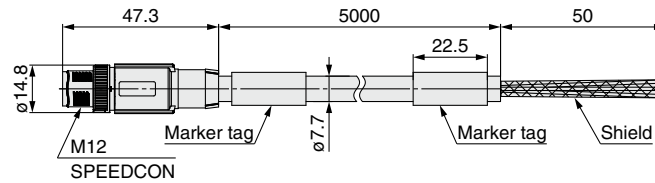
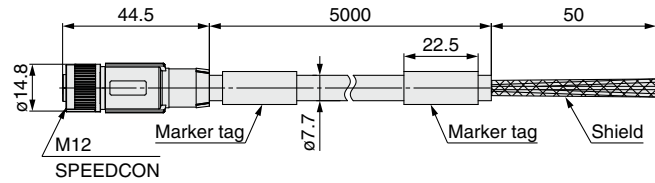


Socket connector pin arrangement  
A-coded (Normal key)  
\*1 Number of holes: 5,  
Total number of pins: 4

**PCA-1567717**  
(Plug)



Plug connector pin arrangement  
A-coded (Normal key)



Connections

Item		Specifications
Cable O.D.		ø7.7 mm
Conductor nominal cross section	Data pair	0.5 mm <sup>2</sup> /AWG20
	Drain	0.34 mm <sup>2</sup> /AWG22
Wire O.D. (Including insulator)		2.55 mm
Min. bending radius (Fixed)		77 mm



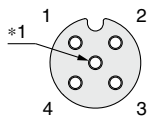
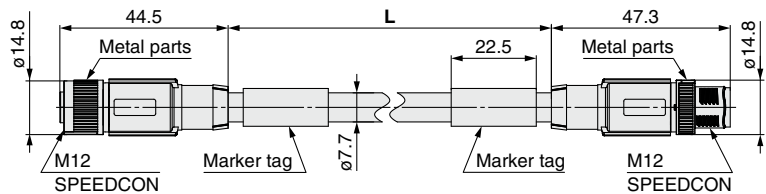
Made to Order

Cable length	10000 mm	p. 130
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**EX9-AC 005 MJ-SSPS** (With connector on both sides (Socket/Plug))

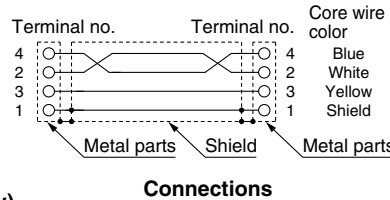
• Cable length

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm

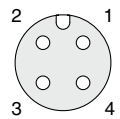


Socket connector pin arrangement  
A-coded (Normal key)

\*1 Number of holes: 5,  
Total number of pins: 4



Connections



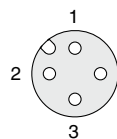
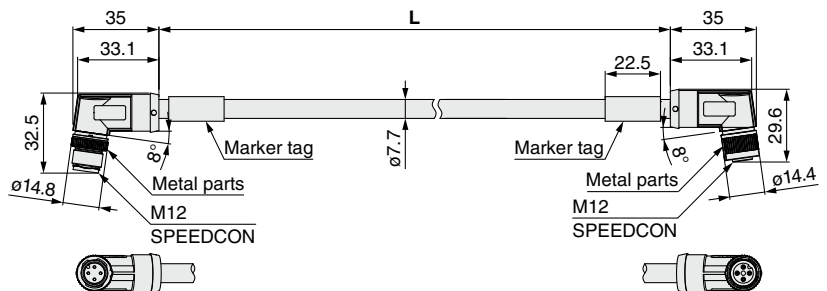
Plug connector pin arrangement  
A-coded (Normal key)

Item		Specifications
Cable O.D.		ø7.7 mm
Conductor nominal cross section	Data pair	0.5 mm <sup>2</sup> /AWG20
	Drain	0.34 mm <sup>2</sup> /AWG22
Wire O.D. (Including insulator)		2.55 mm
Min. bending radius (Fixed)		77 mm

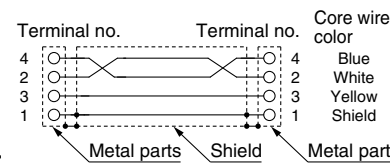
**EX9-AC 005 MJ-SAPA** (With angle connector on both sides (Socket/Plug))

• Cable length

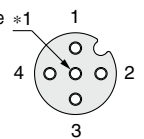
005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm



Plug connector pin arrangement  
A-coded (Normal key)



Connections



Socket connector pin arrangement  
A-coded (Normal key)

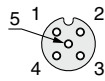
\*1 Number of holes: 5,  
Total number of pins: 4

Item		Specifications
Cable O.D.		ø7.7 mm
Conductor nominal cross section	Data pair	0.5 mm <sup>2</sup> /AWG20
	Drain	0.34 mm <sup>2</sup> /AWG22
Wire O.D. (Including insulator)		2.55 mm
Min. bending radius (Fixed)		77 mm

**① Communication Cable**

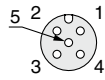
**For DeviceNet™**

**PCA-1557633**  
(Socket)

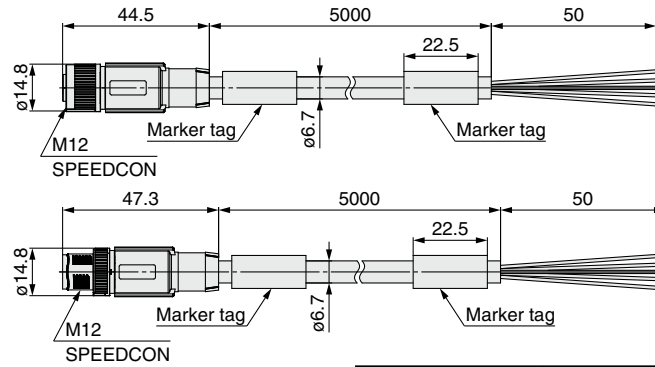


Socket connector pin arrangement A-coded (Normal key)

**PCA-1557646**  
(Plug)

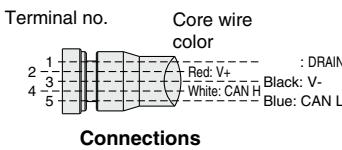


Socket connector pin arrangement A-coded (Normal key)



**Made to Order**

Cable length	10000 mm	p. 130
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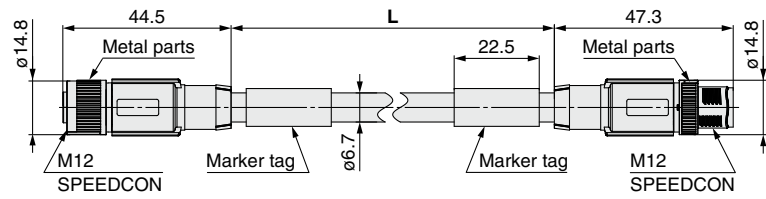


Item		Specifications
<b>Cable O.D.</b>		ø6.7 mm
<b>Conductor nominal cross section</b>	Power pair	0.34 mm <sup>2</sup> /AWG22
	Data pair	0.25 mm <sup>2</sup> /AWG24
<b>Wire O.D. (Including insulator)</b>	Power pair	1.4 mm
	Data pair	2.05 mm
<b>Min. bending radius (Fixed)</b>		67 mm

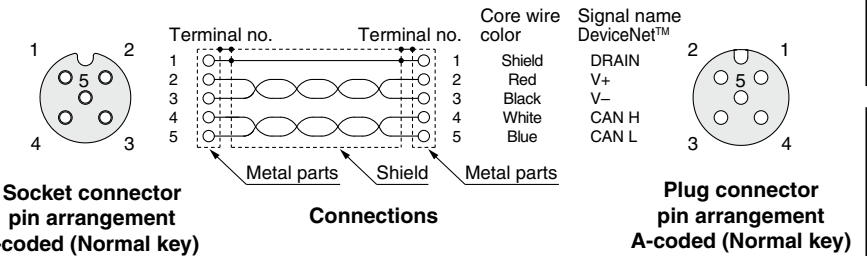
**EX9-AC 005 DN-SSPS (With connector on both sides (Socket/Plug))**

• Cable length (L)

<b>005</b>	500 mm
<b>010</b>	1000 mm
<b>020</b>	2000 mm
<b>030</b>	3000 mm
<b>050</b>	5000 mm
<b>100</b>	10000 mm



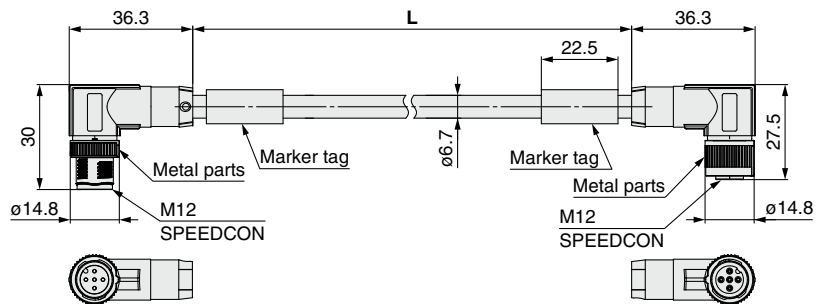
Item		Specifications
<b>Cable O.D.</b>		ø6.7 mm
<b>Conductor nominal cross section</b>	Power pair	0.34 mm <sup>2</sup> /AWG22
	Data pair	0.25 mm <sup>2</sup> /AWG24
<b>Wire O.D. (Including insulator)</b>	Power pair	1.4 mm
	Data pair	2.05 mm
<b>Min. bending radius (Fixed)</b>		67 mm



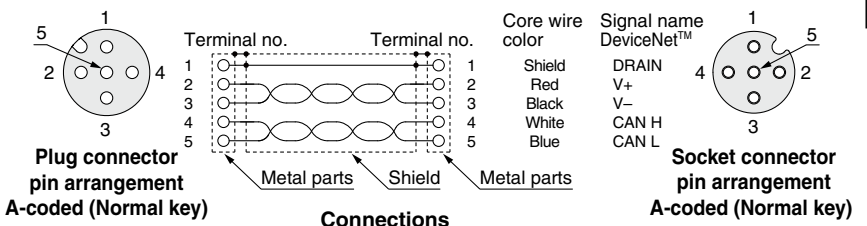
**EX9-AC 005 DN-SAPA (With angle connector on both sides (Socket/Plug))**

• Cable length (L)

<b>005</b>	500 mm
<b>010</b>	1000 mm
<b>020</b>	2000 mm
<b>030</b>	3000 mm
<b>050</b>	5000 mm
<b>100</b>	10000 mm



Item		Specifications
<b>Cable O.D.</b>		ø6.7 mm
<b>Conductor nominal cross section</b>	Power pair	0.34 mm <sup>2</sup> /AWG22
	Data pair	0.25 mm <sup>2</sup> /AWG24
<b>Wire O.D. (Including insulator)</b>	Power pair	1.4 mm
	Data pair	2.05 mm
<b>Min. bending radius (Fixed)</b>		67 mm



Type 1 EX260  
 EX123/124/126  
 Type 2 EX500  
 EX600  
 Type 3 EX245  
 EX250  
 Type 1 EX140  
 EX180  
 Type 2 EX510  
 M8/M12  
 ATEX

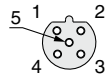


# EX600 Series

## ① Communication Cable

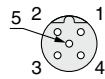
### For PROFIBUS DP

**PCA-1557688**  
(Socket)

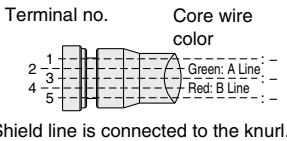
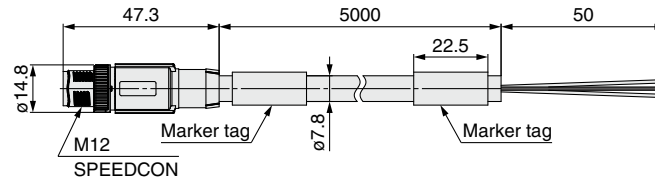
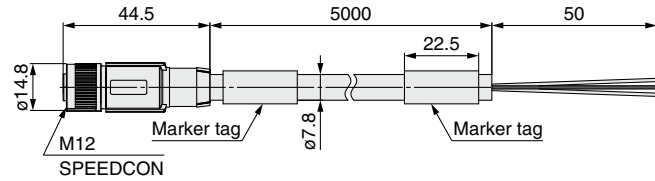


Socket connector pin arrangement B-coded (Reverse key)

**PCA-1557691**  
(Plug)



Plug connector pin arrangement B-coded (Reverse key)



Connections

Item	Specifications
<b>Cable O.D.</b>	ø7.8 mm
<b>Conductor nominal cross section</b>	0.34 mm <sup>2</sup> /AWG22
<b>Wire O.D. (Including insulator)</b>	2.55 mm
<b>Min. bending radius (Fixed)</b>	78 mm

### For EtherCAT For PROFINET For EtherNet/IP™

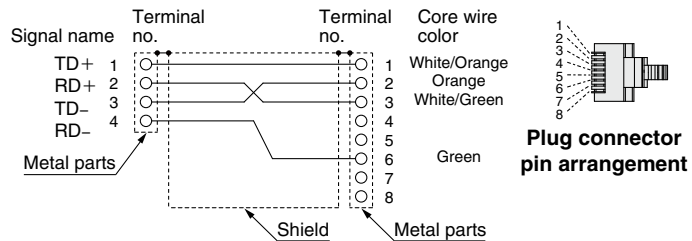
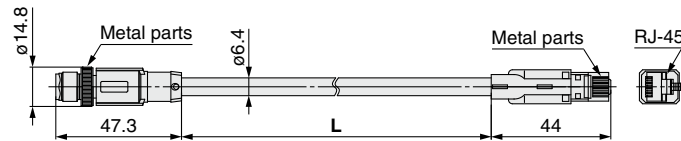
**EX9-AC 020 EN-PSRJ** (Plug/RJ-45 connector)

● Cable length (L)

<b>010</b>	1000 mm
<b>020</b>	2000 mm
<b>030</b>	3000 mm
<b>050</b>	5000 mm
<b>100</b>	10000 mm



Plug connector pin arrangement D-coded



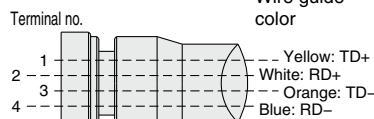
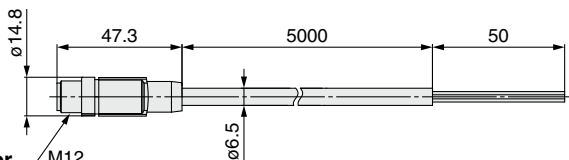
Connections (Straight cable)

Item	Specifications
<b>Cable O.D.</b>	ø6.4 mm
<b>Conductor nominal cross section</b>	0.14 mm <sup>2</sup> /AWG26
<b>Wire O.D. (Including insulator)</b>	0.98 mm
<b>Min. bending radius (Fixed)</b>	26 mm

**PCA-1446566** (Plug)



Plug connector pin arrangement D-coded



Connections

Item	Specifications
<b>Cable O.D.</b>	ø6.5 mm
<b>Conductor nominal cross section</b>	AWG22
<b>Wire O.D. (Including insulator)</b>	1.55 mm
<b>Min. bending radius (Fixed)</b>	45.5 mm



Made to Order

Change in the cable length

p. 131

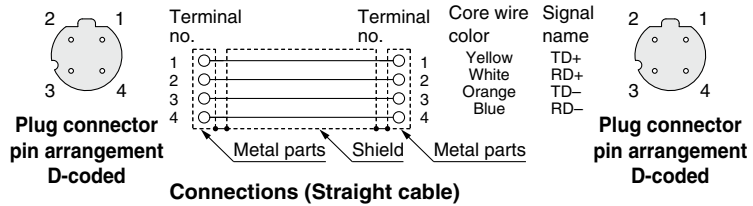
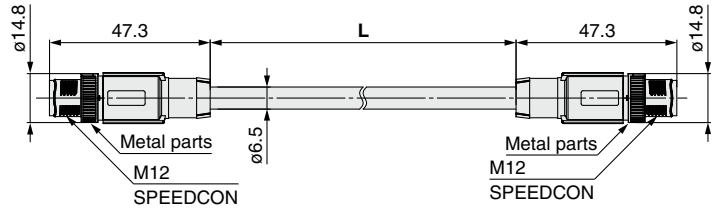
**① Communication Cable**

For EtherCAT® For PROFINET For EtherNet/IP™

**EX9-AC 005 EN-PSPS (With connector on both sides (Plug/Plug))**

• Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm

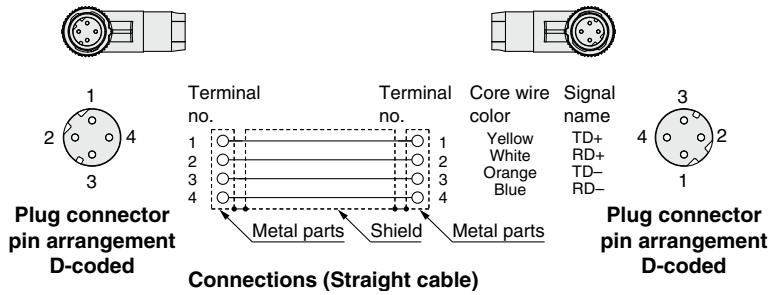
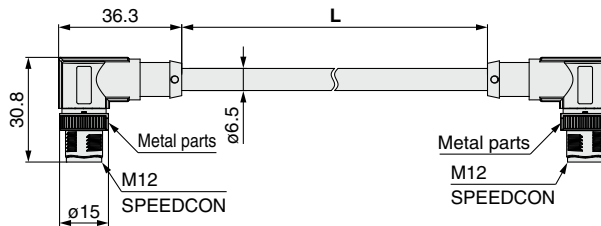


Item	Specifications
<b>Cable O.D.</b>	ø6.5 mm
<b>Conductor nominal cross section</b>	0.34 mm <sup>2</sup> /AWG22
<b>Wire O.D. (Including insulator)</b>	1.55 mm
<b>Min. bending radius (Fixed)</b>	19.5 mm

**EX9-AC 005 EN-PAPA (With angle connector on both sides (Plug/Plug))**

• Cable length (L)

005	500 mm
010	1000 mm
020	2000 mm
030	3000 mm
050	5000 mm
100	10000 mm



Item	Specifications
<b>Cable O.D.</b>	ø6.5 mm
<b>Conductor nominal cross section</b>	0.34 mm <sup>2</sup> /AWG22
<b>Wire O.D. (Including insulator)</b>	1.55 mm
<b>Min. bending radius (Fixed)</b>	19.5 mm

Type 1  
EX260  
EX123/124/126

Type 2  
EX500

Type 3  
EX600  
EX245  
EX250

Type 1  
EX120/121/122  
EX140

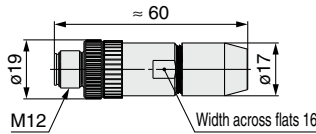
Type 2  
EX180  
EX510

M8/M12  
ATEX

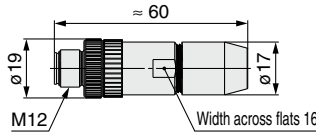
**12 Field-wireable Communication Connector**

**Plug**

**For CC-Link**   **For DeviceNet™**  
**PCA-1557617**   **PCA-1557659**



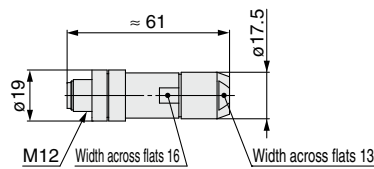
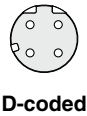
**For PROFIBUS DP**  
**PCA-1557701**



**Applicable Cable**

Item	Specifications
<b>Cable O.D.</b>	4.0 to 8.0 mm
<b>Wire gauge (Stranded wire cross section)</b>	0.14 to 0.5 mm <sup>2</sup> AWG26 to 20

**For EtherCAT**   **For PROFINET**   **For EtherNet/IP™**  
**PCA-1446553**



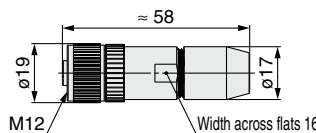
**Applicable Cable**

Item	Specifications
<b>Cable O.D.</b>	4.0 to 8.0 mm
<b>Wire gauge (Stranded wire cross section)</b>	0.14 to 0.34 mm <sup>2</sup> /AWG26 to 22

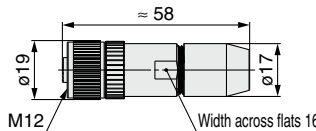
\* The table above shows the specifications for the applicable cable. Adaptation for the connector may vary on account of the conductor construction of the electric wire.

**Socket**

**For CC-Link**   **For DeviceNet™**  
**PCA-1557620**   **PCA-1557662**



**For PROFIBUS DP**  
**PCA-1557714**



**Applicable Cable**

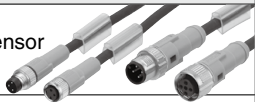


Item	Specifications
<b>Cable O.D.</b>	4.0 to 8.0 mm
<b>Wire gauge (Stranded wire cross section)</b>	0.14 to 0.5 mm <sup>2</sup> AWG26 to 20

Type 1	EX260
Type 1	EX123/124/126
Type 2	EX500
Type 3	EX600
Type 3	EX245
Type 3	EX250
Type 1	EX120/121/122
Type 1	EX140
Type 1	EX180
Type 2	EX510
	M8/M12
	ATEX

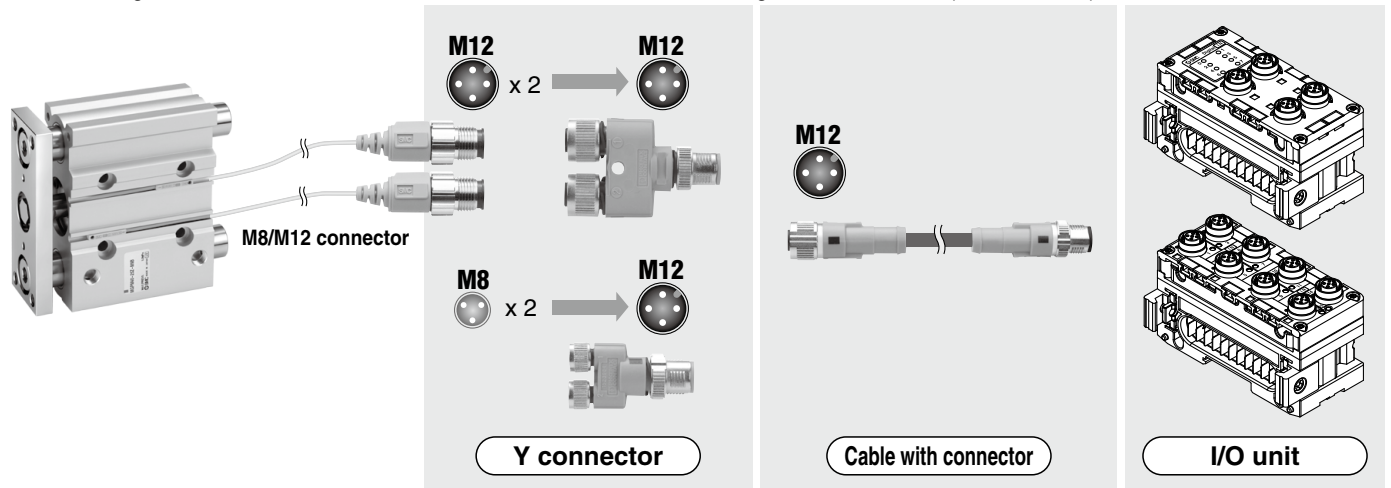
# EX600 Series

## ⑬ I/O Cable with Connector / I/O Connector

For details, refer to pages 237 to 239 and later.

Name	Use	Part no.	Description
<b>Cable with connector</b>		<b>PCA-1557769</b>	Cable with M12 connector (4 pins/3 m)
		<b>PCA-1557772</b>	Cable with M8 connector (3 pins/3 m)
<b>Field-wireable connector</b>		<b>PCA-1557730</b>	Field-wireable connector (M8/3 pins/Plug/Piercecon® connection)
		<b>PCA-1557743</b>	Field-wireable connector (M12/4 pins/Plug/QUICKON-ONE connection/SPEEDCON)
		<b>PCA-1557756</b>	Field-wireable connector (M12/4 pins/Plug/QUICKON-ONE connection/SPEEDCON)
<b>Y connector</b>		<b>PCA-1557785</b>	Y connector (2 x M12 (5 pins)-M12 (5 pins)/SPEEDCON)
		<b>PCA-1557798</b>	Y connector (2 x M8 (3 pins)-M12 (4 pins)/SPEEDCON)

\* When using the Y connector, connect it to the connector on the I/O unit through the sensor cable (PCA-1557769) with the M12 connector.





# EX600 Series

# Made to Order

Please contact SMC for detailed specifications and lead times.



## SI Unit

Prepare the SI unit, each type of unit, and the manifold valve (without SI unit) separately, and combine them before use.

### ① MRP (PROFINET) compatible

#### EX600-SPN1A-X34

- Dimensions are the same as those of the EX600-SPN1.

### ② Ethernet POWERLINK compatible

#### EX600-SPL1-X26

- Dimensions are the same as those of the EX600-SEN3.

Type 1	EX260
Type 2	EX500
Type 3	EX600
Type 1	EX245
Type 1	EX250
Type 1	EX120/121/122
Type 1	EX140
Type 1	EX180
Type 2	EX510
Type 1	M8/M12
Type 1	ATEX

**Communication Cable**

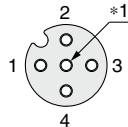
③ With connector on one side (Socket)  
Cable length: 10000 mm

For CC-Link    For DeviceNet™

EX9-AC100 **MJ** -X12

• Applicable protocol

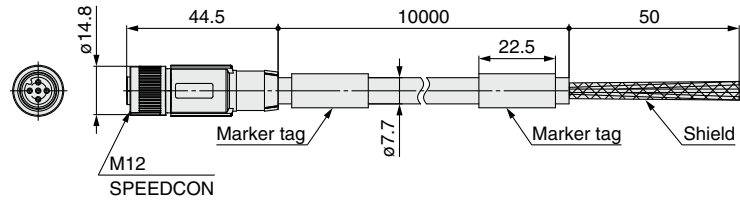
<b>MJ</b>	CC-Link
<b>DN</b>	DeviceNet™



Socket connector pin arrangement A-coded (Normal key)

**For CC-Link**

**Dimensions**



**Connections**

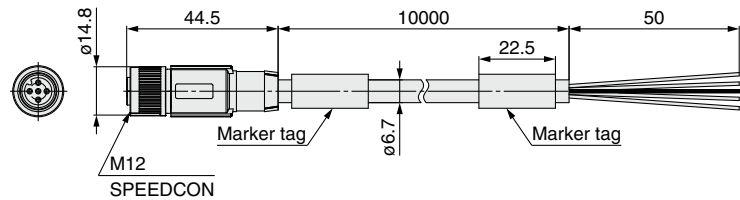
Terminal no.	Core wire color: Signal name (CC-Link)
<b>1</b>	Shield: SLD
<b>2</b>	White: DB
<b>3</b>	Yellow: DG
<b>4</b>	Blue: DA

\*1 Number of holes: 5, Total number of pins: 4

Item		Specifications
<b>Cable O.D.</b>		ø7.7 mm
<b>Conductor nominal cross section</b>	Data pair	0.5 mm <sup>2</sup> /AWG20
	Drain	0.34 mm <sup>2</sup> /AWG22
<b>Wire O.D. (Including insulator)</b>		2.55 mm
<b>Min. bending radius (Fixed)</b>		77 mm

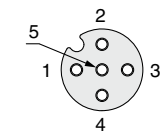
**For DeviceNet™**

**Dimensions**



**Connections**

Terminal no.	Core wire color: Signal name (DeviceNet™)
<b>1</b>	Shield: DRAIN
<b>2</b>	Red: V+
<b>3</b>	Black: V-
<b>4</b>	White: CAN H
<b>5</b>	Blue: CAN L



Socket connector pin arrangement A-coded (Normal key)

Item		Specifications
<b>Cable O.D.</b>		ø6.7 mm
<b>Conductor nominal cross section</b>	Power pair	0.34 mm <sup>2</sup> /AWG22
	Data pair	0.25 mm <sup>2</sup> /AWG24
<b>Wire O.D. (Including insulator)</b>	Power pair	1.4 mm
	Data pair	2.05 mm
<b>Min. bending radius (Fixed)</b>		67 mm

Type 1	EX260
Type 1	EX123/124/126
Type 2	EX500
Type 2	EX600
Type 3	EX245
Type 3	EX250
Type 1	EX120/121/122
Type 1	EX140
Type 1	EX180
Type 2	EX510
Type 2	M8/M12
Type 2	ATEX



# EX600 Series Specific Product Precautions

Be sure to read this before handling the products. Refer to page 277 for safety instructions. For fieldbus system precautions, refer to pages 278 to 280 and the "Operation Manual" on the SMC website: <http://www.smcworld.com>

## Mounting

### ⚠ Caution

1. When handling and assembling units, do not touch the sharp metal parts of the connector or plug.
2. When connecting six stations or more, be sure to use the intermediate reinforcing brace (EX600-ZMB1 or EX600-ZMB2).

## Operating Environment

### ⚠ Caution

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

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

- 1) Provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors.
- 2) Appropriately mount each unit and valve manifold.
- 3) Be sure to mount a seal cap on any unused connectors.

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

When the enclosure is IP40, do not use in an operating environment or atmosphere where it may come in contact with corrosive gas, chemical agents, seawater, water, or water vapor. When connected to the EX600-D□□E or EX600-D□□F, manifold enclosure is IP40.

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

## Adjustment / Operation

### ⚠ Warning

<Handheld Terminal>

1. Do not apply pressure to the LCD.

There is a possibility of the crack of LCD and injuring.

2. 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.

This may cause, injuries or equipment damage.

3. Incorrect setting of parameters can cause a malfunction. Be sure to check the settings before use.

This may cause injuries or equipment damage.

### ⚠ Caution

<Handheld Terminal>

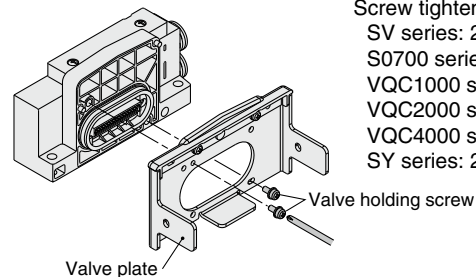
1. Do not press the setting buttons with a sharp pointed object.

This may cause damage or equipment failure.

2. 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, a valve plate which connects the manifold and SI unit, is not mounted. Use attached valve holding screws and mount the valve plate.  
(Tightening torque: 0.6 to 0.7 N·m)



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

#### ■ Trademark

DeviceNet™ is a trademark of ODVA.

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EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

Modbus® is a registered trademark of Schneider Electric, licensed to the Modbus Organization, Inc.

QuickConnect™ is a trademark of ODVA.

Type 1	EX260
Type 2	EX500
Type 3	EX245
	EX250
Type 1	EX140
Type 2	EX510
	M8/M12
	ATEX