



Operation Manual

PRODUCT NAME

Fieldbus system
EtherNet/IP™ compatible SI Unit
(For Ford Motor Company)

MODEL / Series / Product Number

EX600-SEN5-X16
EX600-ED3-X16
EX600-DXPD-X16
EX600-DYPB-X16

SMC Corporation




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Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution", "Warning" or "Danger". They are all important notes for safety and must be followed in addition to International standards (ISO/IEC) *1) and other safety regulations.

- *1) ISO 4414: Pneumatic fluid power -- General rules relating to systems.
- ISO 4413: Hydraulic fluid power -- General rules relating to systems.
- IEC 60204-1: Safety of machinery -- Electrical equipment of machines. (Part 1: General requirements)
- ISO 10218-1992: Manipulating industrial robots -Safety.
- etc.

 Caution :	CAUTION indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
 Warning :	WARNING indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
 Danger :	DANGER indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

Warning

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

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

2. Only personnel with appropriate training should operate machinery and equipment.

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

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

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

 **Caution****The product is provided for use in manufacturing industries.**

The product herein described is basically provided for peaceful use in manufacturing industries. If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".

Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. *2)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

*2) Vacuum pads are excluded from this 1 year warranty.

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.

Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulation of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Operator

- ◆ This operation manual is intended for those who have knowledge of machinery using pneumatic equipment, and have sufficient knowledge of assembly, operation and maintenance of such equipment. Only those persons are allowed to perform assembly, operation and maintenance.
- ◆ Read and understand this operation manual carefully before assembling, operating or providing maintenance to the product.

■ Safety Instructions

Warning

- Do not disassemble, modify (including changing the printed circuit board) or repair.
An injury or failure can result.
- Do not operate or set with wet hands.
This may lead to an electric shock.
- Do not operate the product outside of the specifications.
Do not use for flammable or harmful fluids.
Fire, malfunction, or damage to the product can result.
Verify the specifications before use.
- Do not operate in an atmosphere containing flammable or explosive gases.
Fire or an explosion can result.
This product is not designed to be explosion proof.
- If using the product in an interlocking circuit:
 - Provide a double interlocking system, for example a mechanical system.
 - Check the product regularly for proper operation.Otherwise malfunction can result, causing an accident.
- The following instructions must be followed during maintenance:
 - Turn off the power supply.
 - Stop the air supply, exhaust the residual pressure and verify that the air is released before performing maintenance.Otherwise an injury can result.

Caution

- When handling the unit or assembling/replacing units:
 - Do not touch the sharp metal parts of the connector or plug for connecting units.
 - Take care not to hit your hand when disassembling the unit.
The connecting portions of the unit are firmly joined with seals.
 - When joining units, take care not to get fingers caught between units.
An injury can result.

- After maintenance is complete, perform appropriate functional inspections.
Stop operation if the equipment does not function properly.
Safety cannot be assured in the case of unexpected malfunction.

- Provide grounding to assure the noise resistance of the Fieldbus system.
Individual grounding should be provided close to the product with a short cable.

■ NOTE

- Follow the instructions given below when designing, selecting and handling the product.
 - The instructions on design and selection (installation, wiring, environment, adjustment, operation, maintenance, etc.) described below must also be followed.
 - *Product specifications
 - The direct current power supply to combine should be UL1310 Class 2 power supply when conformity to UL is necessary.
 - Use the specified voltage.
Otherwise failure or malfunction can result.
 - Reserve a space for maintenance.
Allow sufficient space for maintenance when designing the system.
 - Do not remove any nameplates or labels.
This can lead to incorrect maintenance, or misreading of the operation manual, which could cause damage or malfunction to the product.
It may also result in non-conformity to safety standards.
 - Beware of inrush current when the power supply is turned on.
Some connected loads can apply an initial charge current which will activate the over current protection function, causing the unit to malfunction.

● Product handling

*Installation

- Do not drop, hit or apply excessive shock to the SI unit.

Otherwise damage to the product can result, causing malfunction.

- Tighten to the specified tightening torque.

If the tightening torque is exceeded the mounting screws may be broken.

IP67 protection cannot be guaranteed if the screws are not tightened to the specified torque.

- If a large manifold valve is mounted, lift the unit so that stress is not applied to the connecting part while transporting.

The stress may cause breakage of the connecting part. The unit may become very heavy depending on the combination. Transportation/installation shall be performed by multiple operators.

- Never mount a product in a location that will be used as a foothold.

The product may be damaged if excessive force is applied by stepping or climbing onto it.

*Wiring

- Avoid repeatedly bending or stretching the cables, or placing heavy load on them.

Repetitive bending stress or tensile stress can cause breakage of the cable.

- Wire correctly.

Incorrect wiring can break the product.

- Do not perform wiring while the power is on.

Otherwise damage to the SI unit and/or input or output device can result, causing malfunction.

- Do not route wires and cables together with power or high voltage cables.

Otherwise the SI unit and/or input or output device can malfunction due to interference of noise and surge voltage from power and high voltage cables to the signal line.

Route the wires (piping) of the SI unit and/or input or output device separately from power or high voltage cables.

- Confirm proper insulation of wiring.

Poor insulation (interference from another circuit, poor insulation between terminals, etc.) can lead to excess voltage or current being applied to the product, causing damage.

- Take appropriate measures against noise, such as using a noise filter, when the Fieldbus system is incorporated into equipment.

Otherwise noise can cause malfunction.

*Environment

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

IP67 protection is achieved when the following conditions are met.

- (1) The units are connected properly with fieldbus cable with M12 connector and power cable with M12 (M8) connector.
- (2) Suitable mounting of each unit and manifold valve.
- (3) Be sure to fit a waterproof cap on any unused connectors.

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

Do not use in an environment where moisture or water vapor are present. Otherwise failure and malfunction can result.

- Do not use in a place where the product could be splashed by oil or chemicals.

If the product is to be used in an environment containing oils or chemicals such as coolant or cleaning solvent, even for a short time, it may be adversely affected (damage, malfunction etc.).

- Do not use the product in an environment where corrosive gases or fluids could be splashed.

Otherwise damage to the product and malfunction can result.

- Do not use in an area where surges are generated.

If there is equipment generating large surge near the unit (magnetic type lifter, high frequency inductive furnace, welding machine, motor, etc.), this can cause deterioration of the internal circuitry element of the unit or result in damage. Take measures against the surge sources, and prevent the lines from coming into close contact.

- When a surge-generating load such as a relay, valve or lamp is driven directly, use a product with a built-in surge absorbing element.
Direct drive of a load generating surge voltage can damage the unit.
- The product is CE marked, but not immune to lightning strikes. Take measures against lightning strikes in the system.
- Prevent foreign matter such as dust or wire debris from getting inside the product.
- Mount the product in a place that is not exposed to vibration or impact.
Otherwise failure or malfunction can result.
- Do not use the product in an environment that is exposed to temperature cycle.
Heat cycles other than ordinary changes in temperature can adversely affect the inside of the product.
- Do not expose the product to direct sunlight.
If using in a location directly exposed to sunlight, shade the product from the sunlight.
Otherwise failure or malfunction can result.
- Keep within the specified ambient temperature range.
Otherwise malfunction can result.
- Do not operate close to a heat source, or in a location exposed to radiant heat.
Otherwise malfunction can result.

*Adjustment and Operation

- Set the switches by using a sharp-pointed screwdriver etc. When setting the switch, do not touch other unrelated parts.
This can cause parts damage or malfunction due to a short circuit.
- Perform settings suitable for the operating conditions.
Incorrect setting can cause operation failure.
- Please refer to the PLC manufacturer's manual etc. for details of programming and addresses.
For the PLC protocol and programming refer to the relevant manufacturer's documentation.

*Maintenance

- Turn off the power supply, stop the supplied air, exhaust the residual pressure and verify the release of air before performing maintenance.
There is a risk of unexpected malfunction.
- Perform regular maintenance and inspections.
There is a risk of unexpected malfunction.
- After maintenance is complete, perform appropriate functional inspections.
Stop operation if the equipment does not function properly.
Otherwise safety is not assured due to an unexpected malfunction or incorrect operation.
- Do not use solvents such as benzene, thinner etc. to clean each unit.
They could damage the surface of the body and erase the markings on the body.
Use a soft cloth to remove stains.
For heavy stains, use a cloth soaked with diluted neutral detergent and fully squeezed, then wipe up the stains again with a dry cloth.

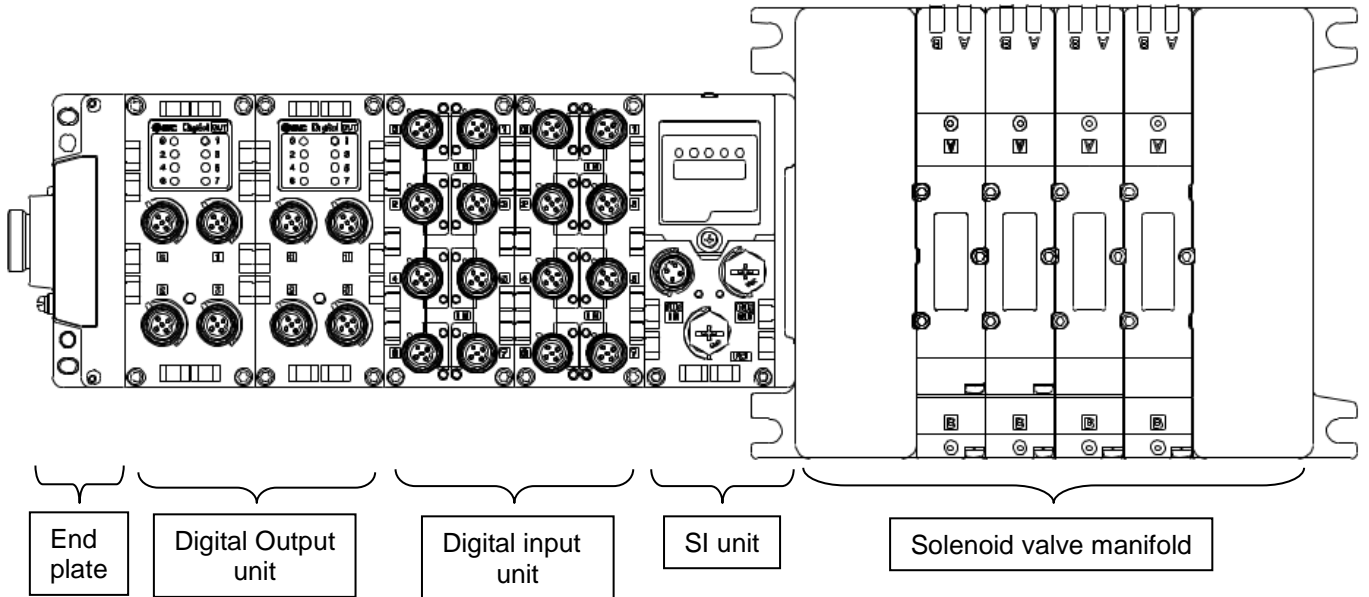
System Outline

System configuration

The EX600-SEN5-X16(SI unit) can communicate to EtherNet/IP.

SI unit has the following features.

- Number of valve outputs : Max.32 outputs
- Number of Digital input units : Max.3 units (EX600-DXPD-X16)
- Number of Digital output units : Max.3 units (EX600-DYPB-X16)



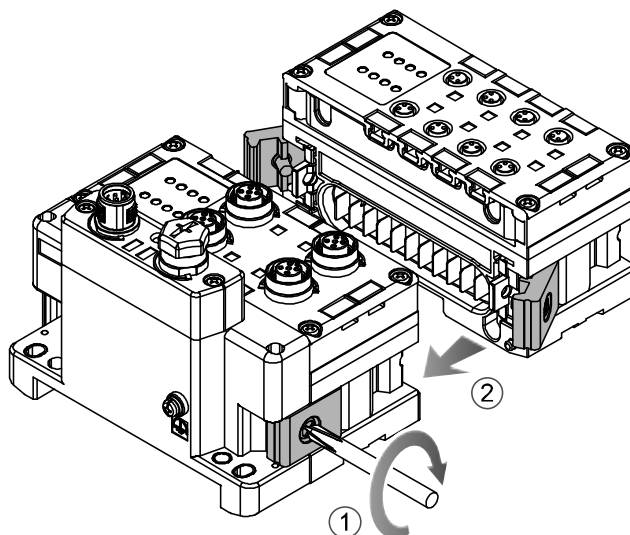
Name	Function
SI unit (EX600-SEN5-X16)	Performs fieldbus communication and solenoid valve manifold ON/OFF output.
Digital input unit (EX600-DXPD-X16)	For connecting sensors with switch output capability.
Digital Output unit (EX600-DYPB-X16)	For connecting output device such as solenoid valves, lamps, buzzers, etc.
End plate (EX600-ED3-X16)	Connected at EX600 Manifold's D side, incorporating the power supply connection.
Solenoid valve manifold	An assembly of solenoid valves. One connector is used as the electric connection to all connected valves.

Assembly

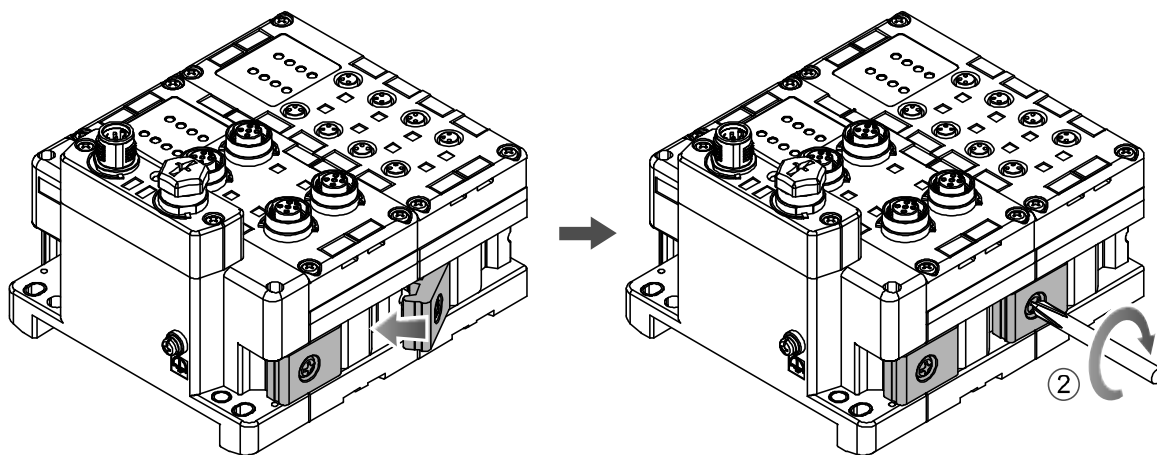
● Composing the unit as a manifold

*: If the unit was purchased as a manifold, the work described in this section is not necessary.

- (1) Connect the unit to the end plate.
The Digital unit, Analogue unit can be connected in any order.
(Tightening torque: 1.5 to 1.6Nm)



- (2) Add more units.
Up to 4 units (including the SI unit) can be connected to one manifold.

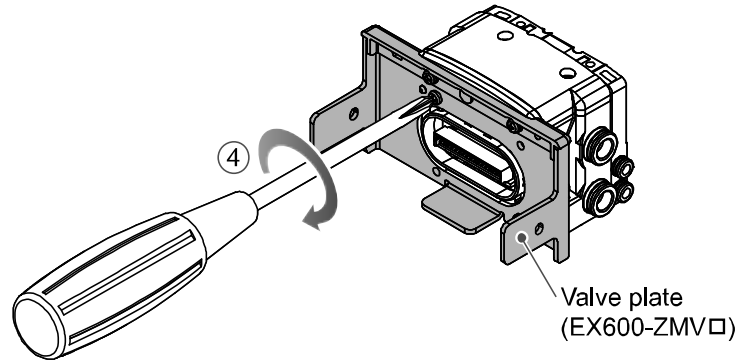


- (3) Connecting the SI unit.
After connecting the necessary units, connect the SI unit.
Connecting method is the same as above (1), (2).

(4) Mounting the valve plate.

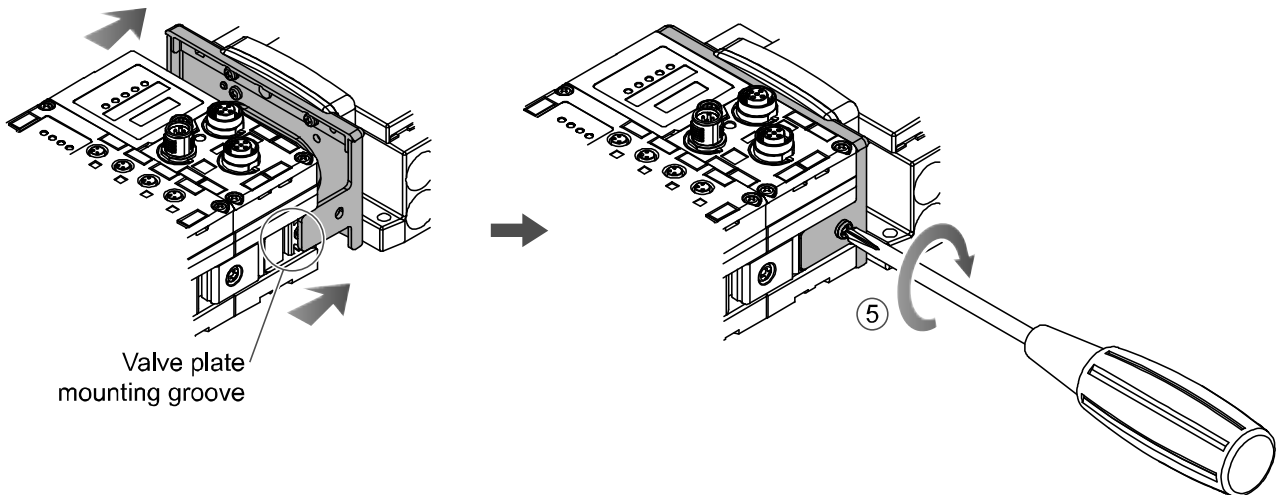
Mount the valve plate (EX600-ZMV□) to the valve manifold using the valve set screws. (M3 x 8)
(Tightening torque: 0.6 to 0.7 Nm)

Screw mounting place	
SV	: 2 places
S0700	: 2 places
VQC1000	: 2 places
VQC2000	: 3 places
VQC4000	: 4 places
SY	: 2 places



(5) Connect the SI unit and the valve manifold.

Insert the valve plate to the valve plate set groove on the side of SI unit.
Then, tighten it with the valve plate set screws (M4 x 6) to fix the plate.
(Tightening torque: 0.7 to 0.8 Nm)



● Precautions for handling

- Please do not connect the unit while the power supply is active. It will cause equipment damage.
- Take care not to drop the nuts of Joint bracket.
- Tighten the screws to the specified torque.
Insufficient tightening may lead to equipment malfunction, injury or equipment damage.

Mounting and Installation

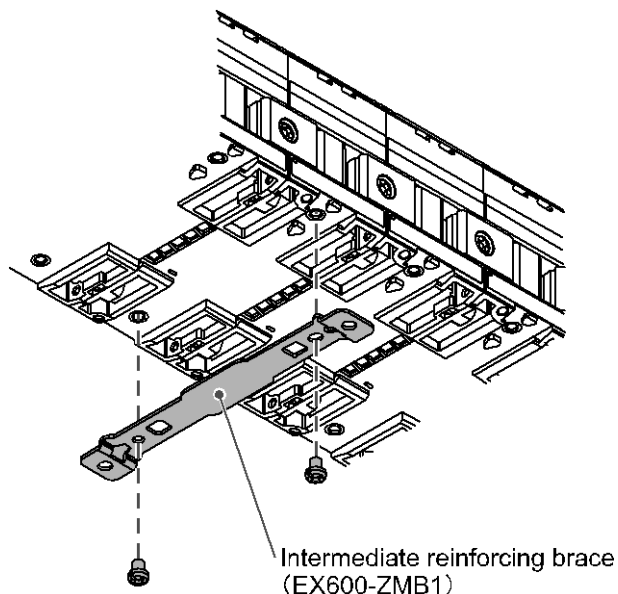
■ Installation

• Direct mounting

(1) Direct mounting

When joining six or more units, fix the middle part of the complete EX600 unit with an intermediate reinforcing brace (EX600-ZMB1) before mounting using 2-M4 x 5 screws.

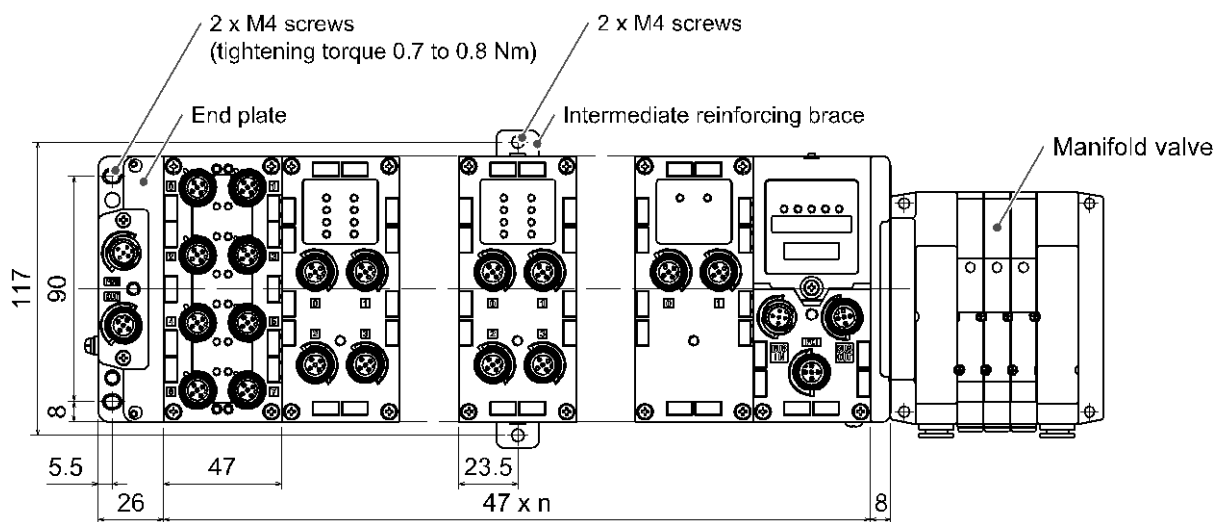
(Tightening torque: 0.7 to 0.8 Nm)



(2) Fix and tighten the end plates at one end of the unit. (M4)

(Tightening torque: 0.7 to 0.8 Nm)

Fix the end plate at the valve side while referring to the operation manual of the corresponding valve manifold.



n (Number of connected Units) ≤ 4

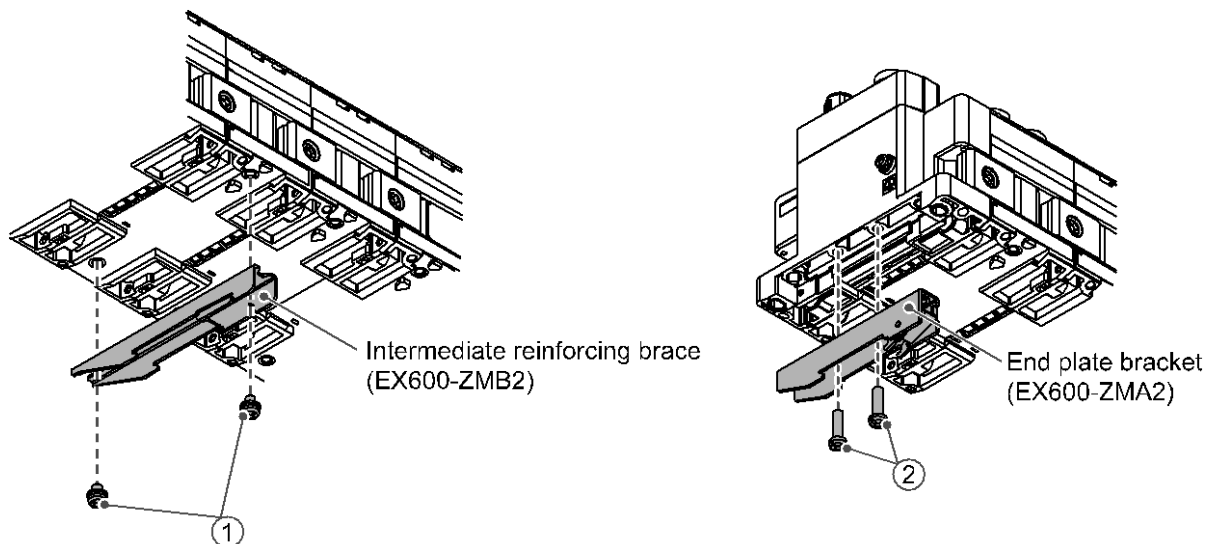
● Precautions for handling

- When joining six or more units, fix the middle part of the complete unit with an intermediate reinforcing brace to prevent incorrect connection between the units due to deflection.

•DIN rail mounting

(Not available for SY series valves. Refer to the SY catalog.)

- (1) When joining six or more units, fix the middle part of the complete EX600 unit with an intermediate reinforcing brace (EX600-ZMB2) before mounting, using 2-M4 x 6 screws. (Tightening torque: 0.7 to 0.8 Nm)
- (2) Mount the end plate bracket (EX600-ZMA2) to the end plate at the opposite end to the valves, using 2-M4 x 14 screws. (Tightening torque: 0.7 to 0.8 Nm)

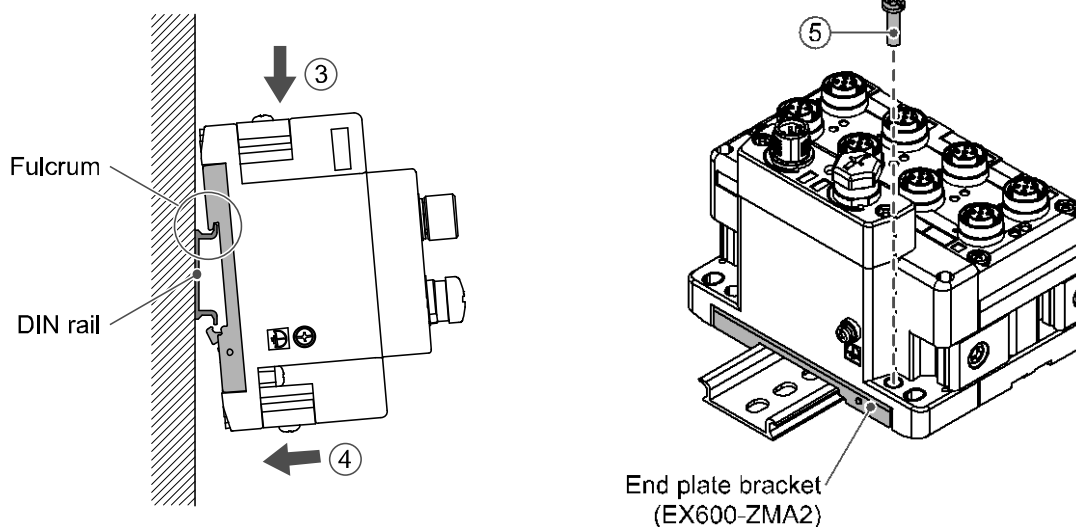


- (3) Hook the DIN rail mounting groove to the DIN rail.
- (4) Press the manifold using its side hooked to the DIN rail as a fulcrum until the manifold is locked.
- (5) Fix the manifold by tightening the DIN rail fixing screws of the EX600-ZMA2. (M4 x 20)

(Tightening torque: 0.7 to 0.8 Nm)

The tightening torque at the valve side depends on the valve type.

Refer to the operation manual of the corresponding valve manifold.



•Precautions for handling

- When joining six or more units, fix the middle part of the complete unit with an intermediate reinforcing brace to prevent incorrect connection between the units due to deflection.

■Wiring

•Connect the M12 or M8 connector cable.

M12 connector is applicable for SPEEDCON connector. SPEEDCON connector wiring method is explained below.

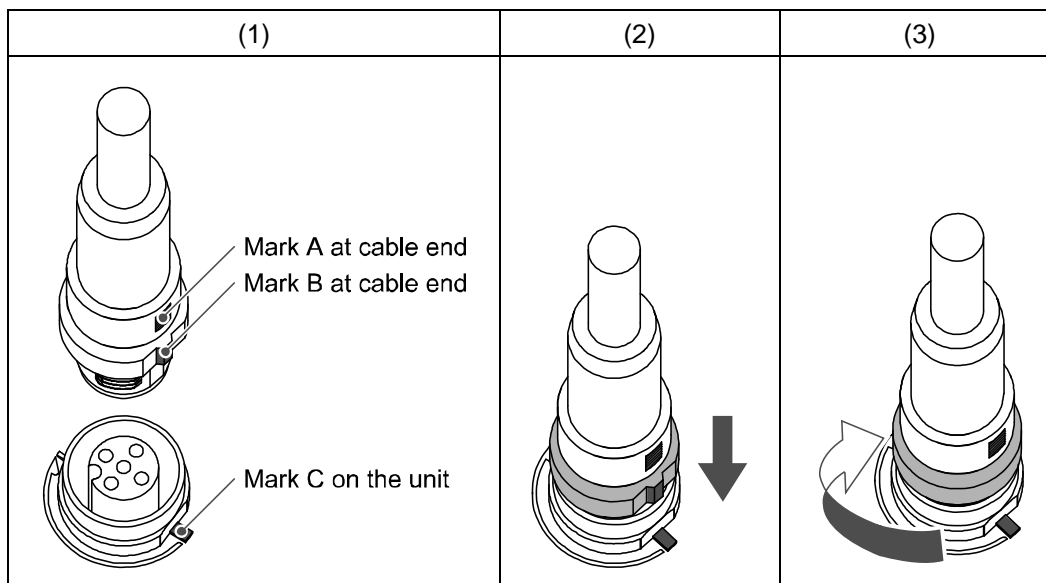
(1) Align the mark B on the metal bracket of the cable side connector (plug/socket) with the mark A.

(2) Align the mark C on the unit and insert the connector into the unit vertically.

If they are not aligned, the connector cannot be joined properly.

(3) When the mark B of the connector has been turned 180 degrees (1/2 turn), wiring is completed.

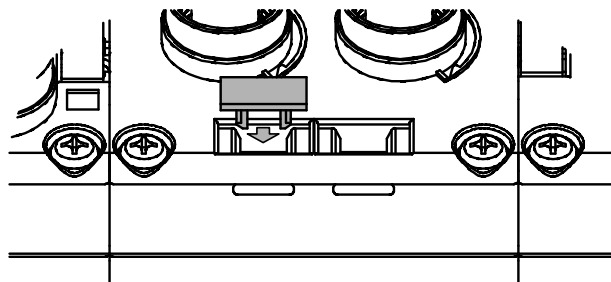
Confirm that the connection is not loose. If turned too far, it will become hard to remove the connector.



•Mounting the marker

Signal name of the input or output devices and unit address can be written to the marker, and it can be installed to each unit.

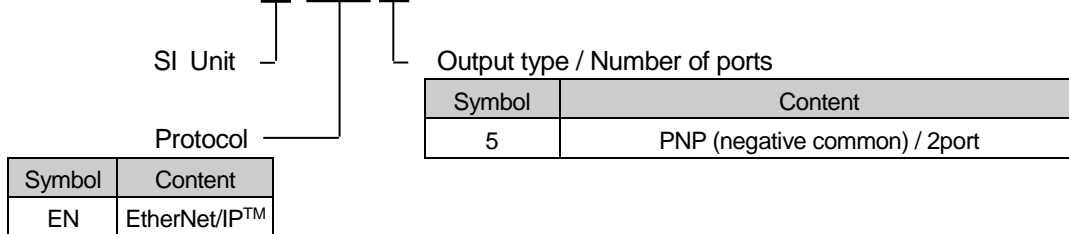
Mount the marker (EX600-ZT1) into the marker groove as required.



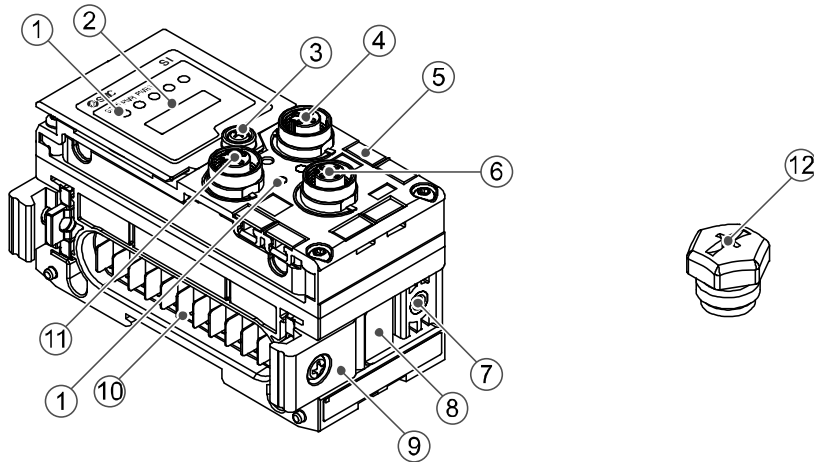
SI Unit

Model Indication and How to Order

EX600-S EN 5 -X16



Summary of Product parts

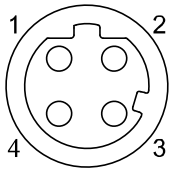


No.	Description	Function
1	Status display LED	Displays the status of the unit.
2	Display cover	Open at the switch configuration.
3	Display cover tightening screw	Loosen to open the display cover.
4	Connector (BUS OUT)	Connects the cable for fieldbus outputs. (M12, 5 pin, socket: SPEEDCON)
5	Marker groove	Groove to mount a marker.
6	Connector (PCI)	Connects the cable of the handheld terminal. (M12, 5 pin, socket: SPEEDCON)
7	Valve plate mounting screw hole	Fixes the valve plate.
8	Valve plate mounting groove	Groove to insert the valve plate into.
9	Joint bracket	Bracket for joining to adjacent units.
10	Unit connector (plug)	Transmits signals and power supplies to adjacent units.
11	Connector (BUS IN)	Connects the cable for fieldbus inputs. (M12, 5 pin, socket: SPEEDCON)
12	Seal cap (2 pcs.)	Mounted on to unused connectors (BUS OUT and PCI).

Mounting and Installation

■ Wiring

Connector pin assignment

Configuration	Pin No.	Signal name
BUS IN / BUS OUT		
	1	TX+
	2	RX+
	3	TX-
	4	RX-

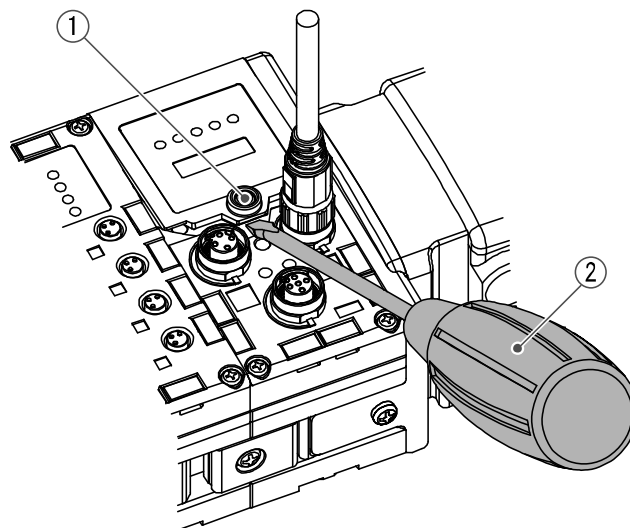
● Precautions for handling

Be sure to fit a seal cap on any unused connectors. Proper use of the seal cap enables the enclosure to achieve IP67 specification.

Setting and Adjustment

● Switch operation

- (1) Loosen the display cover screw (indicated by arrow).
- (2) Open the display cover using a flat head screwdriver, etc.

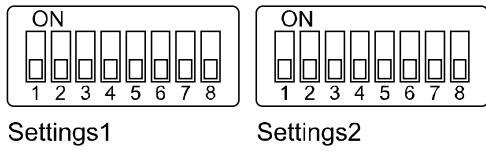


- (3) Set the switch using a small watchmaker's screwdriver with a thin blade, referring to the setting of switch on the following pages.
- (4) After setting the switch, tighten the display cover tightening screw in the reverse order of the above procedure. (Tightening torque: 0.3 to 0.4 Nm)

● Precautions for handling

- Turn off the power supply whilst setting the switch.
- If there is foreign matter or water droplets around the display cover, clean it off before opening the cover.
- When setting the switch, do not touch other unrelated parts. This can cause parts damage or malfunction due to a short circuit.
- All default settings are OFF. Perform the setting of the switch before using this product.
- When introducing power supply, switch setting will become effective.

● **Switch setting**



Settings1		Settings2	
1	Hold/Clear setting	1	•IP address byte 4 setting •DHCP mode setting
2	Reserved	2	
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	

● **Precautions for handling**

- Handle the switch with care. Excessive force can break the switch.
- 2 to 8 of the Settings1 switch are not used. (Never turn it ON.)

•HOLD/CLEAR switch: Sets the output status when the fieldbus has a communication error or is in idling state.

Settings1	Content
1	
OFF	Output is OFF. (default setting)
ON	Holds the output.

*: This switch can be enabled and disabled by parameter.

•IP address setting switch

Settings2								IP address	Subnet mask
1	2	3	4	5	6	7	8		
ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	136.129.2.1	255.255.0.0
OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	136.129.2.2	
:	:	:	:	:	:	:	:	:	
ON	OFF	ON	ON	ON	ON	ON	ON	136.129.2.253	
OFF	ON	ON	ON	ON	ON	ON	ON	136.129.2.254	
ON	ON	ON	ON	ON	ON	ON	ON	DHCP mode *1	
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	Remote Control mode *2	

*1: The mode to obtain IP address from DHCP server. Obtained IP address etc. is lost when the power supply is cut.

*2: The mode to respond to the commands below of BOOTP/DHCP Server provided by Rockwell Automation.

Enable DHCP: IP address etc. can be obtained from BOOTP/DHCP Server.

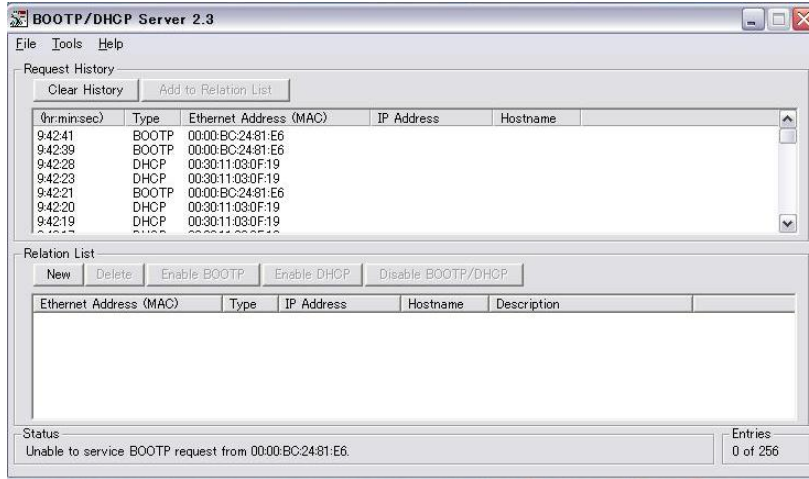
If the power is supplied again in this state, information including IP address is obtained again.

Disable DHCP: IP address etc. cannot be obtained from BOOTP/DHCP Server.

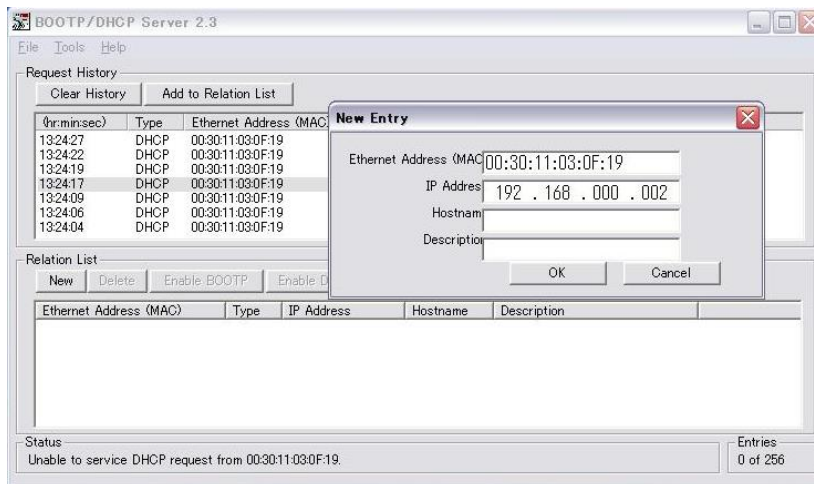
If the power is supplied again with this condition, previous setting can be held.

● **Setting method of IP address by BOOTP/DHCP Server**

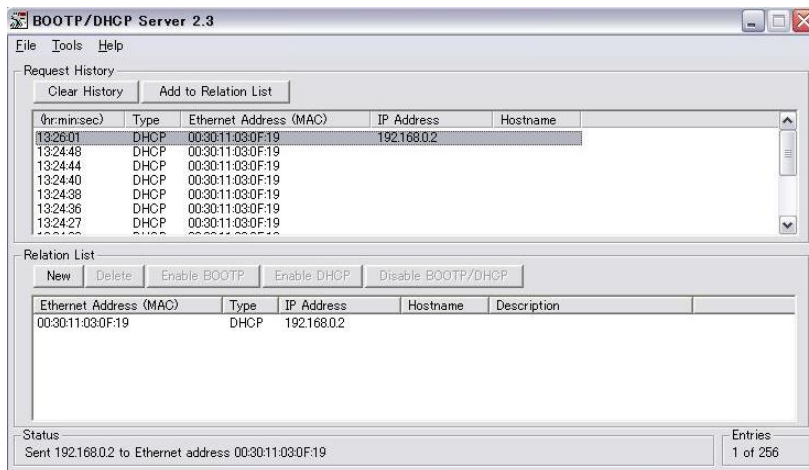
• When BOOTP/DHCP Server starts up, the Server scans the devices connected to the network.



• After selecting the MAC address of EX600, IP address is set.

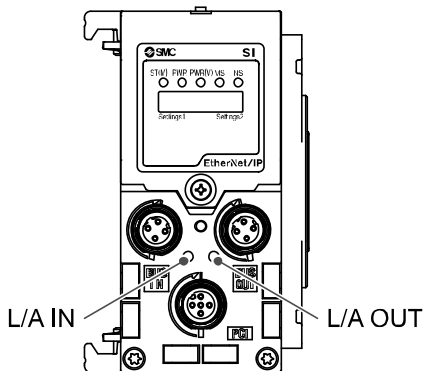


• IP address is set and added to the list.



LED Display







LED display shows the power supply and communication status.



Display	Content
ST(M)	Displays the diagnosis status of the unit.
PWR	Displays the status of the power supply voltage for control and input.
PWR(V)	Displays the status of the power supply voltage for output.
MS	Displays the module status.
NS	Displays the network status.

Display	Content
L/A IN	Displays the communication status of the BUS IN side.
L/A OUT	Displays the communication status of the BUS OUT side.

•ST(M)-LED

LED display	Content
 <p>ST(M) OFF</p>	The power supply for control and input is OFF.
 <p>ST(M) Green ON</p>	Normal operation.
 <p>ST(M) Green flashing</p>	Diagnostic error of I/O unit is detected.
 <p>ST(M) Red flashing</p>	Either of the following diagnostic error is detected. (When diagnostic parameter is enabled) •Valve ON/OFF counter has exceeded the set value. •Valve is short circuited or disconnected.
 <p>ST(M) Red/green flashing alternately</p>	Detect a communication error between SI unit and I/O unit.
 <p>ST(M) Red ON</p>	SI unit has failed.





•PWR-LED

LED display	Content
<p>PWR ● Green ON</p>	The power supply voltage for control and input is 18VDC or more.
<p>PWR ● Red ON</p>	The power supply voltage for control and input is less than 18VDC. (When diagnostic parameter is enabled)






•PWR(V)-LED

LED display	Content
<p>PWR(V) ○ OFF</p>	The power supply voltage for output is less than 18VDC. (When diagnostic parameter is disabled)
<p>PWR(V) ● Green ON</p>	The power supply for output is 18VDC or more
<p>PWR(V) ● Red ON</p>	The power supply voltage for output is less than 18VDC. (When diagnostic parameter is enabled)

•MS-LED

LED display	Content
 MS Green flashing	Either of the following conditions are detected: •The unit has not been configured correctly. •The master is idle state.
 MS Green ON	The unit is in normal operation.
 MS Red flashing	Diagnostic error is detected.
 MS Red ON	The element in SI unit is broken.

•NS-LED

LED display	Content
 NS OFF	IP address is not set.
 NS Green flashing	EtherNet/IP™ communication is not established.
 NS Green ON	EtherNet/IP™ communication is established.
 NS Red flashing	EtherNet/IP™ communication is time-out.
 NS Red ON	IP address is duplicated.

•Communication status

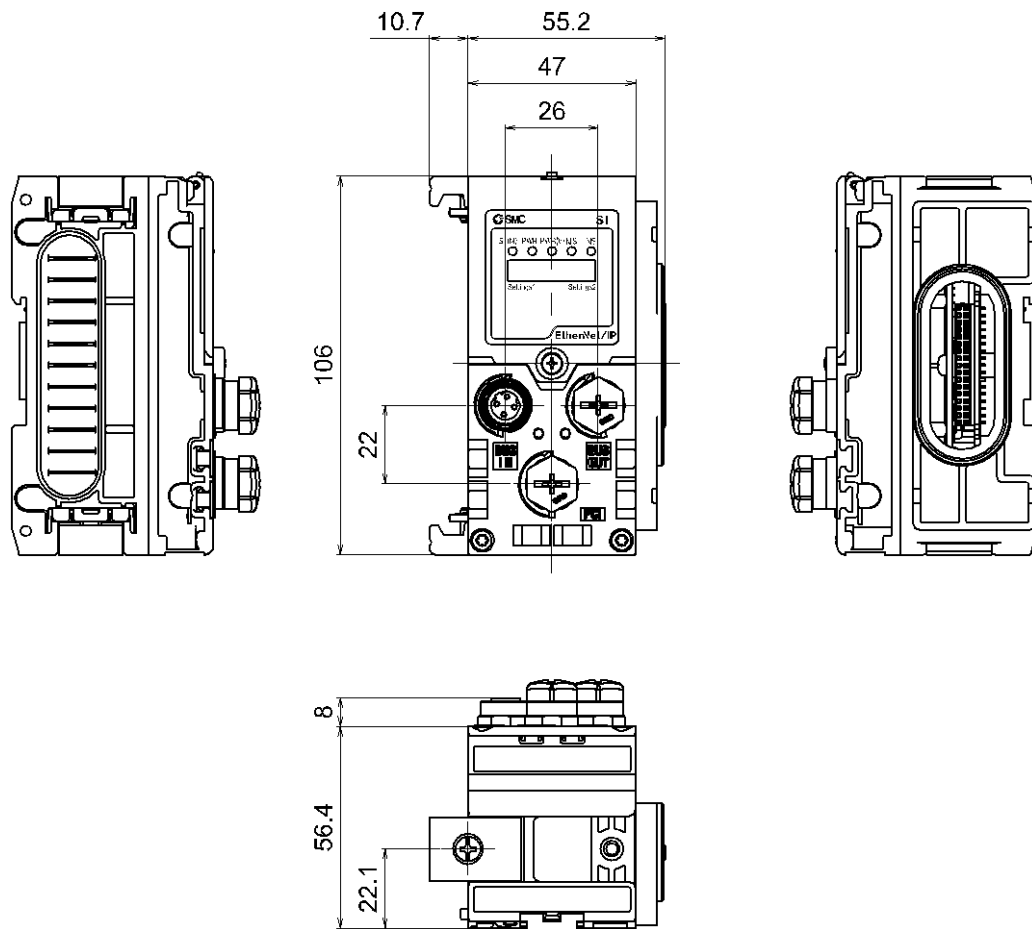
LED display		Content
L/A IN ●	OFF	Bus IN side :No Link, No Activity
	Green ON	Bus IN side : Link, No Activity (100 Mbps)
	Green flashing	Bus IN side : Link, Activity (100 Mbps)
	Yellow ON	Bus IN side : Link, No Activity (10 Mbps)
	Yellow flashing	Bus IN side : Link, Activity (10 Mbps)
L/A OUT ●	OFF	Bus OUT side :No Link, No Activity
	Green ON	Bus OUT side : Link, No Activity (100 Mbps)
	Green flashing	Bus OUT side : Link, Activity (100 Mbps)
	Yellow ON	Bus OUT side : Link, No Activity (10 Mbps)
	Yellow flashing	Bus OUT side : Link, Activity (10 Mbps)

Specifications

Model		EX600-SEN5-X16
Communication	Protocol	EtherNet/IP™
	Transmission medium	Standard EtherNet cable (CAT5 or more, 100BASE-TX)
	Transmission speed	10 / 100 Mbps (Auto negotiation)
	Transmission type	Full duplex / Half duplex
	IP address setting range	Setting by SI unit switch :136.129.2.1 to 254
		Via DHCP server : Arbitrary address
	Device information	Vendor ID: 7 (SMC Corporation) Device type: 12 (Communication Adapter) Product code: 182
	Network topology	Star: Supported Linear Bus: Supported Ring (including DLR): Supported
	EtherNet/IP QuickConnect™	Supported
Web server	Supported	
Current consumption		120 mA or less
Valve output	Output type	Source / PNP(negative common)
	Number of solenoid valves	32 outputs
	Applicable valve series	Solenoid valve with surge voltage suppressor of 24 VDC and 1.0 W or less (manufactured by SMC)
	Output setting during communication fault	HOLD / CLEAR / Force ON
	Protection	Short circuit protection
Environment	Enclosure	IP67 (manifold assembly) *1
	Operating temperature range	-10 to 50 °C
	Storage temperature range	-20 to 60 °C
	Operating humidity range	35 to 85% RH (no dew condition)
	Withstand voltage	500 VAC for 1 minute between external terminals and FE
	Insulation resistance	500 VDC, 10 MΩ or more between external terminals and FE
	Vibration resistance	10 to 57 Hz: constant amplitude 0.75 mm p-p 57 to 150 Hz: constant acceleration 49 m/s ² for 2 hours in each direction X, Y and Z respectively (De-energized)
Impact resistance	147 m/s ² 3 times in each directions of X, Y and Z respectively (De-energized)	
Weight		300 g

*1: All unused connectors must have a seal cap fitted.

■ Dimensions



End plate

Model Indication and How to Order

EX600-ED3-X16

End plate at D side

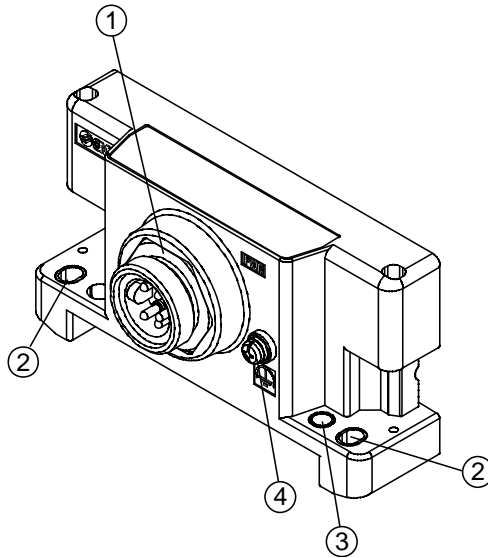
Special specifications

Connector

Symbol	Content
3	7/8 inch Connector

Symbol	Content
X16	<ul style="list-style-type: none"> •With 7/8 inch connector (4pins) for power supply •Applicable pulse test

Summary of Product parts



No.	Description	Function
1	Power connector	Supplies power for each unit and input/output device
2	Fixing hole for direct mounting	Holes used for direct mounting
3	DIN rail fixing hole	Holes used to fix DIN rail
4	FE terminal	FE terminal to grounding

Mounting and Installation

■ Wiring

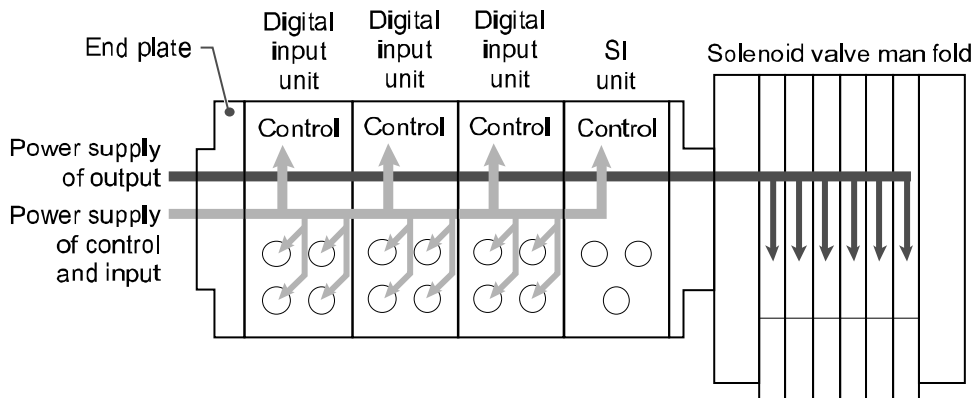
- Connector pin assignment

Pin No.	Signal name	Configuration
1	24V(Output)	
2	24V(Control and Input)	
3	0V(Control and Input)	
4	0V(Output)	

- Regarding the 2 types of power supply

The power supply consists of two power supply systems as follows:

- Power supply for control and input: Supplying power for control of each unit's power supply for control and also for device connected to input port of Digital and Analogue unit.
- Power supply for output: Supplying power for equipment connected to output port of Digital and Analogue unit, and also power supply for solenoid valve manifold.



● Precautions for handling

Be sure to fit a seal cap on any unused connectors. Proper use of the seal cap enables the enclosure to achieve IP67 specification.

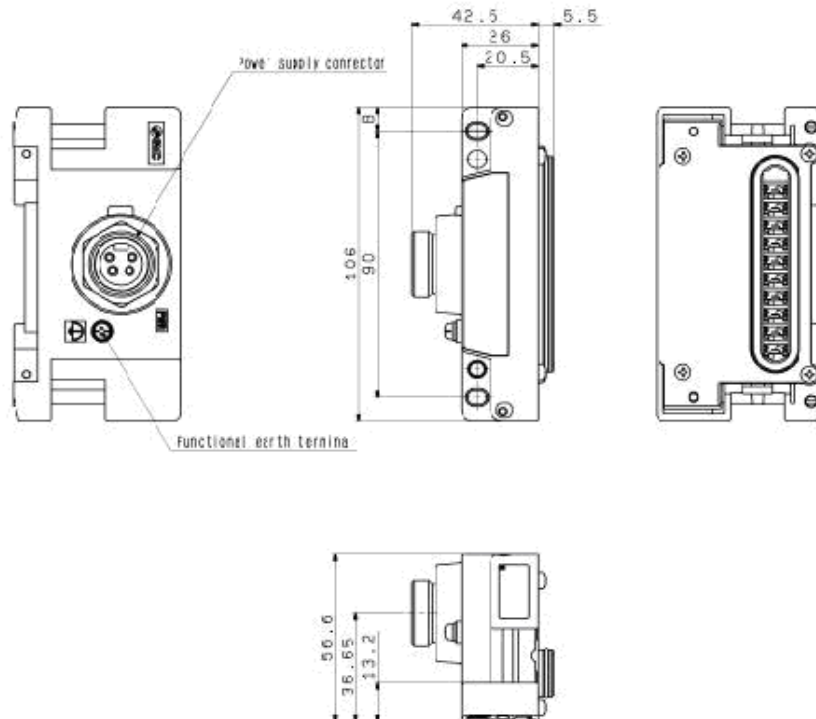
Specifications

■ Specifications

Model		EX600-ED3-X16
Power specifications	Power connector	7/8 inch (4 pins) Plug
	Power supply (control and input)	24 VDC \pm 10%, 2 A
	Power supply (output)	24 VDC +10/-5%, 2 A
Environment	Enclosure	IP67 (with manifold assembled) *1
	Operating temperature range	-10 to 50 °C
	Storage temperature range	-20 to 60 °C
	Operating humidity range	35 to 85%RH (no condensation)
	Withstand voltage	500 VAC for 1 minute between external terminals and FE
	Insulation resistance	500 VDC, 10 M Ω or more between external terminals and FE
	Vibration resistance	10 to 57 Hz: constant amplitude 0.75 mm p-p 57 to 150 Hz: constant acceleration 49 m/s ² for 2 hours in each direction X, Y and Z respectively (De-energized)
Impact resistance	147 m/s ² 3 times in each directions of X, Y and Z respectively (De-energized)	
Weight		175 g

*1: All unused connectors must have a seal cap fitted.

■ Dimensions



Digital input unit

Model Indication and How to Order

EX600-DXPD-X16

Digital input

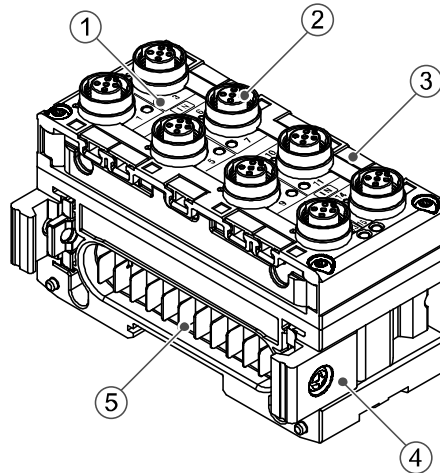
Input type

Number of Inputs and Connector

Symbol	Description
P	PNP

Symbol	Content
D	16 inputs / M12 connector (5pins)

Summary of Product parts

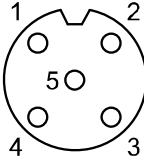


No.	Description	Function
1	Status display LED	Displays the status of the unit.
2	Connector (Input)	Connector for input device.
3	Marker groove	Groove to mount a marker.
4	Joint bracket	Bracket for joining to adjacent units.
5	Unit connector (Plug)	Transmits signals and power supplies to adjacent units.

Mounting and Installation

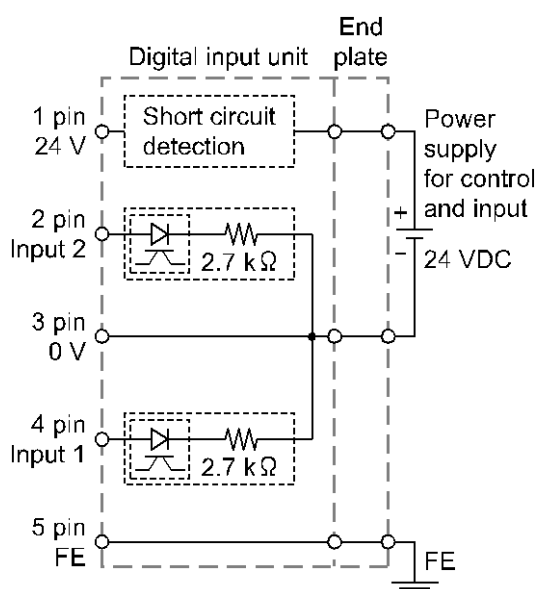
■ Wiring

○ Connector pin assignment

Configuration	Pin number	Signal name
	1	24 V (Control and input)
	2	Input 2
	3	0 V (Control and input)
	4	Input 1
	5	FE

*: An M12 connector (4 pin) can also be connected.

• Circuit diagram

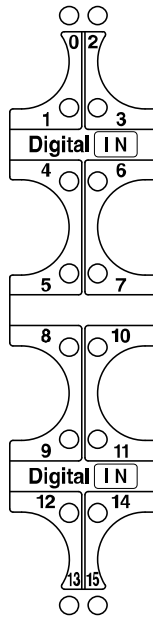




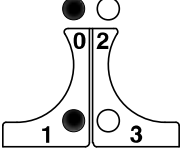

● Precautions for handling

Be sure to fit a seal cap on any unused connectors. Proper use of the seal cap enables the enclosure to achieve IP67 specification.

LED Display

The status display LED shows the following unit state.
Various kinds of status can be checked as follows:



Display	Content
 OFF	The power supply for control and input, or the input device, is OFF.
 Green LED is ON	The input device is ON.
 Red LEDs are ON	The power supply of either input device of adjoined up and down LED has a short circuit.
 Red LED is flashing	The input device ON/OFF count has exceeded the set value.

Specifications

■ Specifications

Model		EX600-DXPD-X16
Input specifications	Input type	PNP
	Input connector	M12 (5 pin) socket *1
	Number of inputs	16 inputs (2 inputs/connector)
	Power supply voltage (Control and input)	24 VDC Class2, 2 A
	Max. sensor supply current	0.5 A/ connector 2 A/unit
	Protective function	Short circuit protection
	Input resistance	2.7 kΩ
	Rated input current	9 mA or less
	ON voltage /ON current	17 V or more/5 mA or more
	OFF voltage /OFF current	5 V or less/1 mA or less
Current consumption		70 mA or less
Environment	Enclosure	IP67 (With manifold assembled) *2
	Operating temperature range	-10 to 50 °C
	Storage temperature range	-20 to 60 °C
	Operating humidity range	35 to 85%RH (No condensation)
	Withstand voltage	500 VAC for 1 minute between external terminals and FE
	Insulation resistance	500 VDC, 10 MΩ or more between external terminals and FE
	Vibration resistance	10 to 57 Hz: constant amplitude 0.75 mm p-p 57 to 150 Hz: constant acceleration 49 m/s ² for 2 hours each in direction X, Y and Z respectively (De-energized)
Impact resistance	147 m/s ² 3 times each in directions of X, Y and Z respectively (De-energized)	
Weight		340 g

*1: An M12 connector (4 pin) can also be connected.

*2: All unused connectors must have a seal cap fitted.

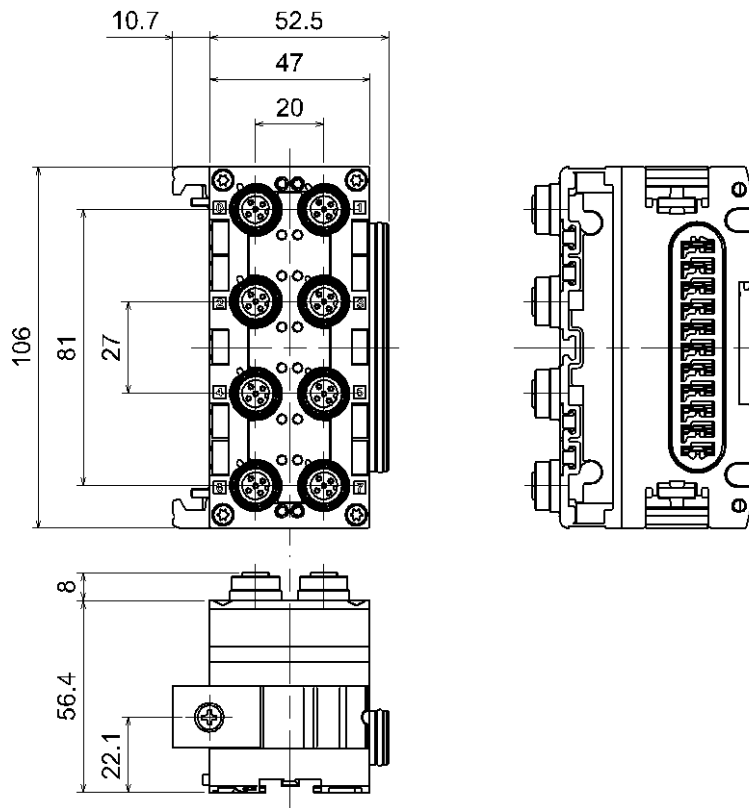
○Digital input data

The relationship between the connector position and the input data assignment is as shown below.

•Input signal assignment (EX600-DXPD-X16)

Connector number		0	1	2	3	4	5	6	7
Connector position									
Input signal	Pin 2	Input 1	Input 3	Input 5	Input 7	Input 9	Input 11	Input 13	Input 15
	Pin 4	Input 0	Input 2	Input 4	Input 6	Input 8	Input 10	Input 12	Input 14

■Dimensions



Digital output unit

Model Indication and How to Order

EX600-DYPB-X16

Digital output

Output type

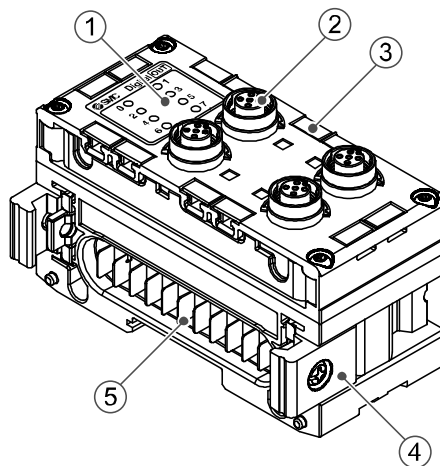
Number of Outputs and Connector

Symbol	Description
P	PNP

Symbol	Content
B	8 outputs / M12 connector (5pins)

Summary of Product parts

•EX600-DYPB-X16

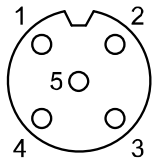


No.	Description	Function
1	Status display LED	Displays the status of the unit.
2	Connector (Output)	Connector for output device.
3	Marker groove	Groove to mount a marker.
4	Joint bracket	Bracket for joining to adjacent units.
5	Unit connector (Plug)	Transmits signals and power supplies to adjacent units.

Mounting and Installation

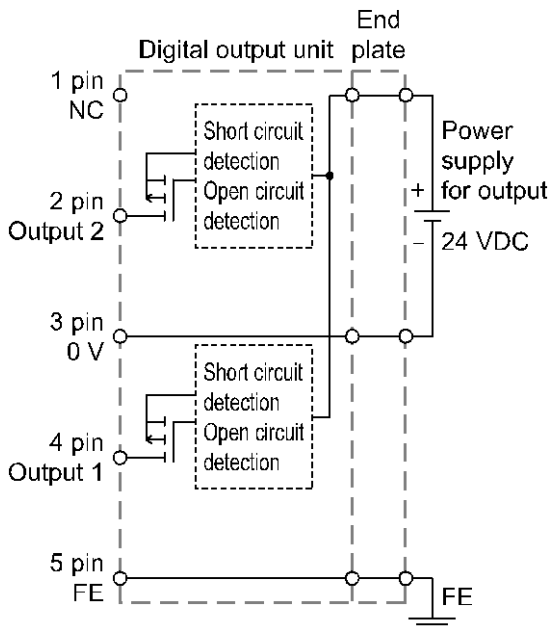
■Wiring

○Connector pin assignment

Configuration	Pin number	Signal name	
	1	NC	24 V (Output)
	2	Output 2	Output 2
	3	0 V (Output)	NC
	4	Output 1	Output 1
	5	FE	FE

*: An M12 connector (4 pin) can also be connected.

•Circuit diagram



•Precautions for handling

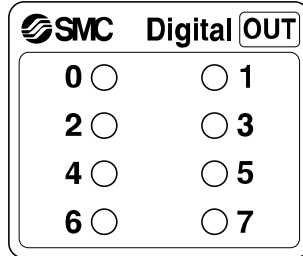
Be sure to fit a seal cap on any unused connectors. Proper use of the seal cap enables the enclosure to achieve IP67 specification.

Note the following points when using the open circuit detection:

- This function detects open circuit only when the output is OFF. Therefore if output is turned ON, open circuit can not be detected.

LED Display

The status display LED shows the following unit state.
Various kinds of status can be checked as follows:



Display	Content
○ OFF	The power supply for control and input, or the output device, is OFF.
● Green LED is ON	The output device is ON.
● Red LED is ON	The output device has a short circuit.
⊙ Red LED is flashing	Either of the following conditions: •The output device ON/OFF count has exceeded the set value. •The output device is open circuit.

*: Refer to troubleshooting (SI unit Operation Manual of protocol used) for the further details of countermeasures.

Specification

■ Specifications

Model		EX600-DYPB-X16
Output specifications	Output type	PNP
	Output connector	M12 (5 pin) socket *1
	Number of outputs	8 outputs (2 outputs/connector)
	Power supply voltage (Control and input)	24 VDC Class2, 2 A
	Power supply voltage (Output)	24 VDC Class2, 2 A
	Max. load current	0.5 A/output 2 A/unit
	Protective function	Short circuit protection
Current consumption		50 mA or less
Environment	Enclosure	IP67 (With manifold assembled) *2
	Operating temperature range	-10 to 50 °C (Max. surrounding air temperature rating: 50 °C) *3
	Storage temperature range	-20 to 60 °C
	Operating humidity range	35 to 85%RH (No condensation)
	Withstand voltage	500 VAC for 1 minute between external terminals and FE
	Insulation resistance	500 VDC, 10 MΩ or more between external terminals and FE
	Vibration resistance	10 to 57 Hz: constant amplitude 0.75 mm p-p 57 to 150 Hz: constant acceleration 49 m/s ² for 2 hours each in direction X, Y and Z respectively (De-energized)
Impact resistance	147 m/s ² 3 times each in directions of X, Y and Z respectively (De-energized)	
Weight		300 g

*1: An M12 connector (4 pin) can also be connected.

*2: All unused connectors must have a seal cap fitted.

○Digital Output data

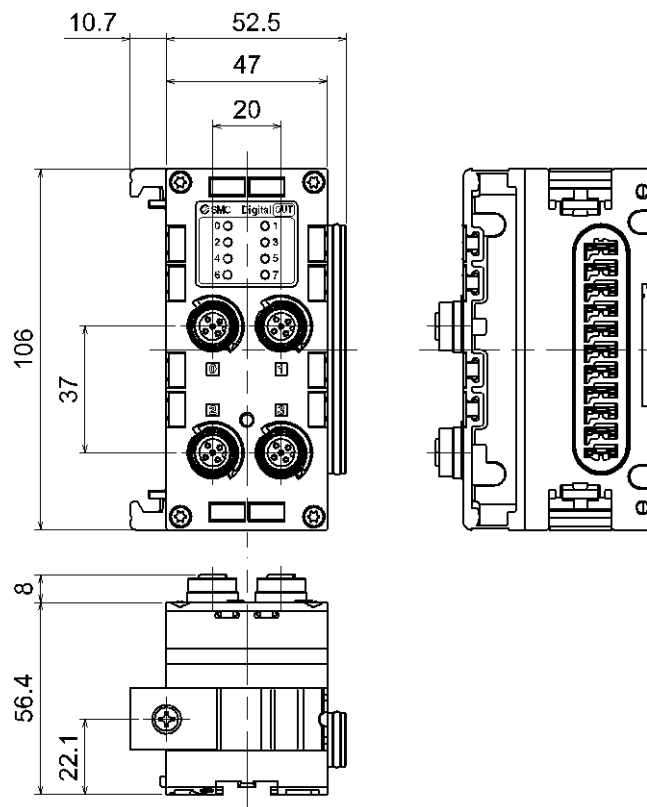
The relationship between the connector position and the output data assignment is as shown below.

•Output signal assignment (EX600-DYPB-X16)

Connector number		0	1	2	3
Connector position					
Output signal	Pin 2	Output 1	Output 3	Output 5	Output 7
	Pin 4	Output 0	Output 2	Output 4	Output 6

■Dimensions

•EX600-DY□B



Maintenance

Turn OFF the power supply, stop the supplied air, exhaust the residual pressure and verify the release of air before performing maintenance.

Cleaning method

Use a soft cloth to remove stains.

For heavy stains, use a cloth soaked with diluted neutral detergent and fully squeezed, then wipe up the stains again with a dry cloth.

Do not use solvents such as benzene, thinner etc. to clean each unit.

Inspection item	Content of inspection
Connector/Electric wiring	Connect properly if the connection is loose.
Seal cap	Tighten properly if the connection is loose.
Thread for mounting and installation	If the thread is loose, re-tighten it to the specified torque.
Connection cables	If the cable is broken or any other abnormality is confirmed by appearance, replace the cable with a new one.
Supply source voltage	Check if source voltage within the specification range (24 VDC \pm 10%) is supplied.

How to reset the product for power cut or forcible de-energizing

Supply power to the product.

The output status just before the power failure is not maintained when power supply is recovered.

Start operation after confirming safety of the entire equipment.

Parameter Setting

The EX600 parameters can be configured for the system, each unit and each channel. Parameters can be changed by Web server.

■ Parameter definition and setting

With EX600 series, parameters can be set for each unit.

The table below shows settable parameters for the SI unit and input/output units.

•SI unit parameters (1)

No.	Parameter	Definition	Item	Content	Default setting	Parameter setting range
1	Hold/Clear priority setting	Switch the setting of the output during communication error or communication idling to follow the setting of the SI unit or the parameters.	Via switch	Setting by SI unit switch becomes valid. OFF/Hold can be set output of all.	○	System
			Via software	Setting by EtherNet/IP™ object or the Web server becomes valid. OFF/Hold/Forced ON can be set per channel.		
2	Short Circuit Detection	Generates error when the short circuit of the valve is detected.	Enable	Generates an error.	○	Unit
			Disable	Does not generate an error.		
3	Restart after short circuit	Restore the setting of short circuit detection error after the valve short circuit is cleared.	Auto	Error is automatically cleared when the short circuit is fixed.	○	Unit
			Manual	Even when the short circuit is fixed, error is not cleared until the power is supplied again.		
4	Open Circuit Detection	Generates error when the disconnection of the valve is detected.	Enable	Generates an error.		Channel
			Disable	Does not generate an error.	○	
5	Output setting during communication fault *1	Sets output when communication error is occurred.	Clear	Turn off the output	○	Channel
			Hold	Hold the output		
			ForceON	Turn on the output forcefully		
6	Output setting during communication idling *1 *2	Output setting at the time of communication idling	Clear	Turn off the output	○	Channel
			Hold	Hold the output		
			ForceON	Turn on the output forcefully		

•SI unit parameters (2)

No.	Parameter	Definition	Item	Content	Default setting	Parameter setting range
6	Valve ON/OFF counter	Generates error when the operation count exceeds the set value. *3	Enable	Generates an error. Val: 1 to 65000 *4		Channel
			Disable	Does not generate an error.	○	
7	Valve ON/OFF counter clear	Clears the valve ON/OFF counter to 0.	-	-	-	-

*1: This function is valid only when "Hold/Clear priority" of the SI unit parameter is set to "Via software".

*2: Some PLC does not support an idle mode.

*3: The count is memorized every hour. When the power supply is turned on again, counting starts from the last value memorized.

*4: Times for setting is set value x1000 times.

•Digital input unit parameters

No.	Parameter	Definition	Item	Content	Default setting	Parameter setting range
1	The power supply short circuit detection for control and input	Generates error when the short circuit of the power supply for the input device is detected.	Enable	Generates an error.	○	Unit
			Disable	Does not generate an error.		
2	Inrush current filter	Selects the over current detection for 100 msec after supplying power.	Enable	Ignores inrush current.	○	Unit
			Disable	Does not ignore inrush current.		
3	Input filtering time	Sets the time to ignore the input signal change.	0.1 ms	Selects the time for filtering.	1.0 ms	Unit
			1.0 ms			
			10 ms			
			20 ms			
4	Input extension time	Sets the time to hold the input signal.	1.0ms	Selects the time to hold the input signal.	15 ms	Unit
			15 ms			
			100 ms			
			200 ms			
5	Input ON/OFF counter	Generates error when the operation count exceeds the set value. *1	Enable	Generates an error. Val: 1 to 65000 *2	○	Channel
			Disable	Does not generate an error.		
6	Input ON/OFF counter clear	Clears the Input ON/OFF counter to 0.	-	-	-	-

*1: The count is memorized every hour. When the power supply is turned on again, counting starts from the last value memorized.

*2: Times for setting is set value x1000 times.

•Digital output unit parameters

No.	Parameter	Definition	Item	Content	Default setting	Parameter setting range
1	Output load short circuit detection	Generates error when the short circuit of the output device is detected. *1	Enable	Generates an error.	○	Unit
			Disable	Does not generate an error.		
2	Restart after output load short circuit	Restore the setting of short circuit detection error after the output device short circuit is cleared.	Auto	Error is automatically cleared when the short circuit is fixed.	○	Unit
			Manual	Even when the short circuit is fixed, error is not cleared until the power is supplied again.		
3	Open circuit detection	Generates error when the disconnection of the output device is detected.	Enable	Generates an error.		Channel
			Disable	Does not generate an error.	○	
4	Output setting during communication fault *2	Sets output when communication error is occurred.	Clear	Turn off the output	○	Channel
			Hold	Hold the output		
			ForceON	Turn on the output forcefully		
5	Output setting during communication idling *2 *3	Sets output during communication idling.	Clear	Turn off the output	○	Channel
			Hold	Hold the output		
			ForceON	Turn on the output forcefully		
6	Output ON/OFF counter	Generates error when the operation count exceeds the set value. *4	Enable	Generates an error. Val: 1 to 65000 *5		Channel
			Disable	Does not generate an error.	○	
7	Output ON/OFF counter clear	Clears the Output ON/OFF counter to 0.	-	-	-	-

*1: Could be incorrectly recognized as short circuit depending on used load (ex.: lamp load). If detection is incorrect, disable the parameter setting.

*2: This function is valid only when "Hold/Clear priority" of the SI unit parameter is set to "Via software".

*3: Some PLC does not support an idle mode.

*4: The count is memorized every hour. When the power supply is turned on again, counting starts from the last value memorized.

*5: Times for setting is set value x1000 times.

I/O Map

I/O mapping

The I/O mapping is shown with the following unit configuration as an example.

	Unit 0	Unit 1	Unit 2	Unit 3	Unit 4	
End plate	DXPD-X16	DXPD-X16	DYPB-X16	DYPB-X16	SEN5-X16	Valve
	Digital input unit	Digital input unit	Digital output unit	Digital output unit	SI unit	
	2byte input	2byte input	1 byte output	1 byte output	4 byte output	

•Input data

Digital Input Unit (Unit 0, EX600-DXPD-X16) :2byte
 Digital Input Unit (Unit 1, EX600-DXPD-X16) :2byte

•Output data

SI Unit (Unit4, EX600-SEN5-X16) :4byte
 Digital Output Unit (Unit2, EX600-DYPB-X16) :1byte
 Digital Output Unit (Unit3, EX600-DYPB-X16) :1byte

Input map : 8bytes fixed (Assembly instance 101)

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Power Status (Out) *1	Reserved						
Byte 1	Reserved						Power Status (C/I) *2	Reserved
Byte 2	Unit 0 Input 7	Unit 0 Input 6	Unit 0 Input 5	Unit 0 Input 4	Unit 0 Input 3	Unit 0 Input 2	Unit 0 Input 1	Unit 0 Input 0
Byte 3	Unit 0 Input 15	Unit 0 Input 14	Unit 0 Input 13	Unit 0 Input 12	Unit 0 Input 11	Unit 0 Input 10	Unit 0 Input 9	Unit 0 Input 8
Byte 4	Unit 1 Input 7	Unit 1 Input 6	Unit 1 Input 5	Unit 1 Input 4	Unit 1 Input 3	Unit 1 Input 2	Unit 1 Input 1	Unit 1 Input 0
Byte 5	Unit 1 Input 15	Unit 1 Input 14	Unit 1 Input 13	Unit 1 Input 12	Unit 1 Input 11	Unit 1 Input 10	Unit 1 Input 9	Unit 1 Input 8
Byte 6	0	0	0	0	0	0	0	0
Byte 7	0	0	0	0	0	0	0	0

*1: Byte 0 Bit 7 is ON -> Power supply voltage for output is less than approx. 18VDC.

*2: Byte 1 Bit 1 is ON -> Power supply voltage for control and input is less than approx. 18VDC.

Output map : 12bytes fixed (Assembly instance 102)

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Reserved							
Byte 1	Reserved							
Byte 2	Unit4 Coil7	Unit4 Coil6	Unit4 Coil5	Unit4 Coil4	Unit4 Coil3	Unit4 Coil2	Unit4 Coil1	Unit4 Coil0
Byte 3	Unit4 Coil15	Unit4 Coil14	Unit4 Coil13	Unit4 Coil12	Unit4 Coil11	Unit4 Coil10	Unit4 Coil9	Unit4 Coil8
Byte 4	Unit4 Coil23	Unit4 Coil22	Unit4 Coil21	Unit4 Coil20	Unit4 Coil19	Unit4 Coil18	Unit4 Coil17	Unit4 Coil16
Byte 5	Unit4 Coil31	Unit4 Coil30	Unit4 Coil29	Unit4 Coil28	Unit4 Coil27	Unit4 Coil26	Unit4 Coil25	Unit4 Coil24
Byte 6	Unit 2 Output 7	Unit 2 Output 6	Unit 2 Output 5	Unit 2 Output 4	Unit 2 Output 3	Unit 2 Output 2	Unit 2 Output 1	Unit 2 Output 0
Byte 7	Reserved							
Byte 8	Unit 3 Output 7	Unit 3 Output 6	Unit 3 Output 5	Unit 3 Output 4	Unit 3 Output 3	Unit 3 Output 2	Unit 3 Output 1	Unit 3 Output 0
Byte 9	Reserved							
Byte 10	Reserved							
Byte 11	Reserved							

Configuration map : 16bytes fixed(Assembly instance 103)

	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte 0	Reserved							
...	Reserved							
Byte 9	Reserved							QC *1
...	Reserved							
Byte 15	Reserved							

*1: Quick Connect mode(0:Normal mode 1:Quick Connect mode)
It is necessary to reenter the power supply to reflect the setting.

EX600-SEN5-X16(SI unit) Boot Modes:

SI unit shall have 2 modes: Normal and Quick Connect.

SI unit shall utilize Configuration Byte 9 Bit 0 as a single value to manipulate the Quick Connect configuration.

Byte 9 Bit 0 Options:

(1) A value of 0 shall return the SI unit to Normal mode:

Bus IN port	Bus OUT port	QuickConnect™ setting
Auto-negotiation	Auto-negotiation	Disable

If SI unit fail Auto Negotiation, Bus IN port should default to 100 Full Duplex Auto-MDIX.
Bus OUT port should default to 100 Full Duplex Auto-MDIX.

(2) A value of 1 shall set the SI unit to Quick Connect mode:

Bus IN port	Bus OUT port	QuickConnect™ setting
100Mbps/Full duplex MDI	100Mbps/Full duplex MDIX	Enable

Hardware Configuration

■ EDS file and icon

EDS file is required to configure the EX600. Furthermore, icons are necessary for the display icon of the EX600 on the configure.

EDS file: ex600_sen5_x16_v11.eds

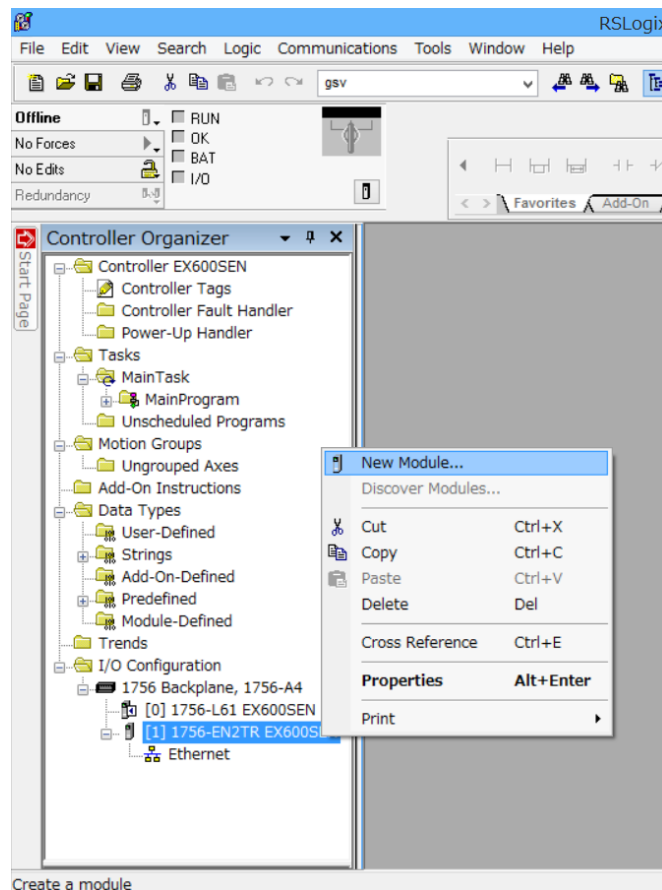
Icon: ex600_1.ico

■ Setting using RSLogix5000™

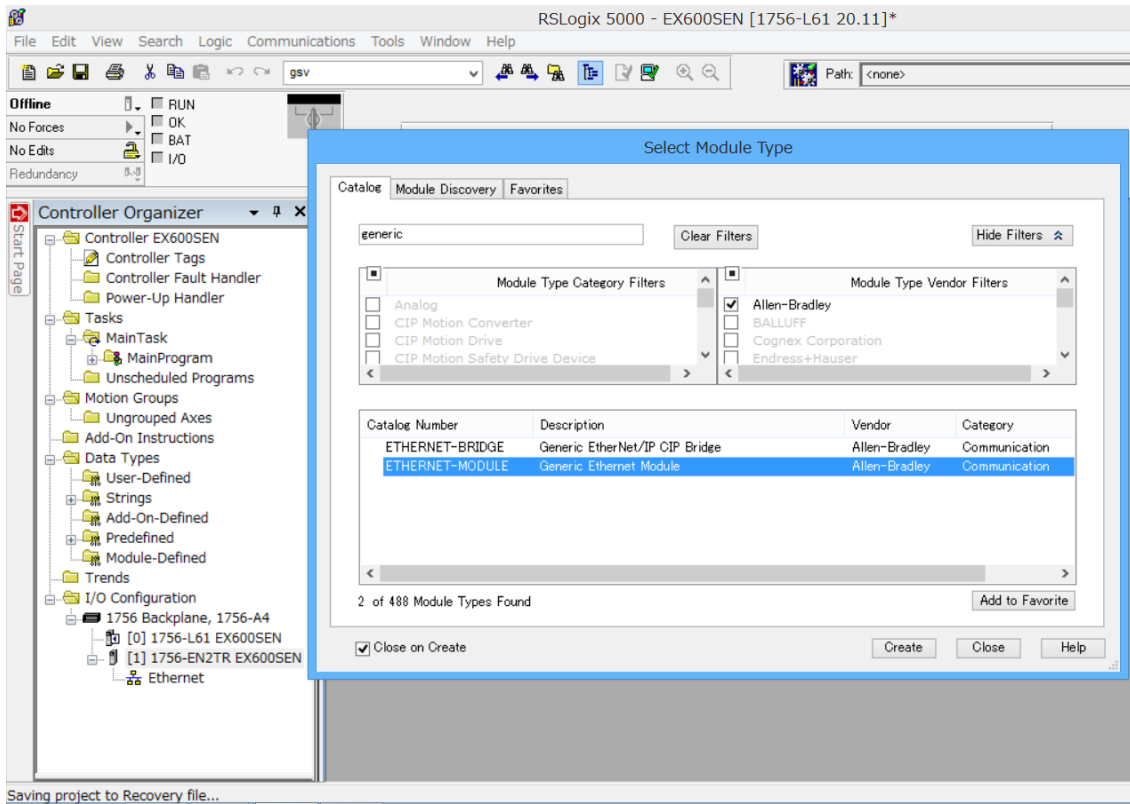
When connecting EX600 series, use RSLogix5000™ software by Rockwell Automation. Refer to the manual of RSLogix5000™ for a detailed manner of operation.

*: The screen data shown here is the English version of RSLogix5000™.

- Select [EtherNet/IP™ module] in [I/O Configuration] folder. Select [New Module].



- [Select Module] window is displayed. Select [ETHERNET-MODULE Generic Ethernet Module], and click on [OK].



•[Module Properties] window is displayed. Perform each setting.

(1)Name: Input the description of specific unit.

(2)Comm Format: Select the data format of Connection Parameters.

(3)IP Address: Input IP Address which is set in SI unit.

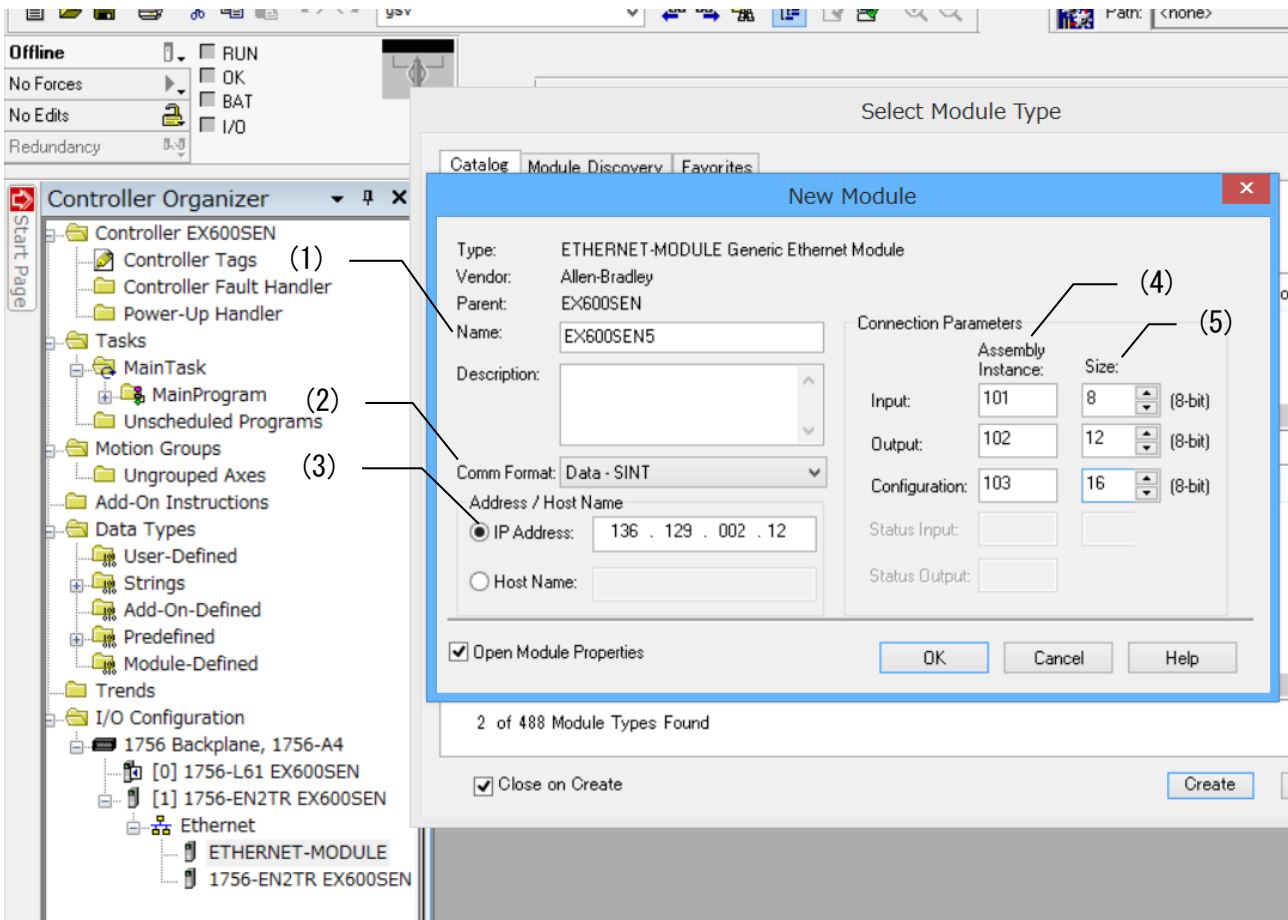
(4)Assembly Instance: Set as below.

Description	Decimal	
Common Format	“Data-INT”	“Data-SINT”
Input	101	101
Output	102	102
Configuration ^{Note)}	103	103

Note) Configuration other than 103 is possible when Configuration Assembly is not used

(5)Size: Set as below.

Description	Decimal	
Common Format	“Data-INT”	“Data-SINT”
Input	4 word	8 byte
Output	6 word	12 byte
Configuration	8 word	16 byte



Web Server

EX600 Web server functional overview

The Web server function is provided by the EX600-SEN5-X16.
The functions available vary depending on the mode.

Function	Admin mode	Monitor only mode
I/O Monitor	Available	Available
Diagnostic status monitor	Available	Available
Parameter setting	Available	Not available
Force I/O setting	Available	Not available

Note

This software operates correctly using Internet Explorer 6 to 11. If the functions do not operate correctly with Internet Explorer 10 or later versions, then use Internet Explorer in compatibility mode.

Connecting to a EX600-SEN5-X16 (Ex. Windows 8)

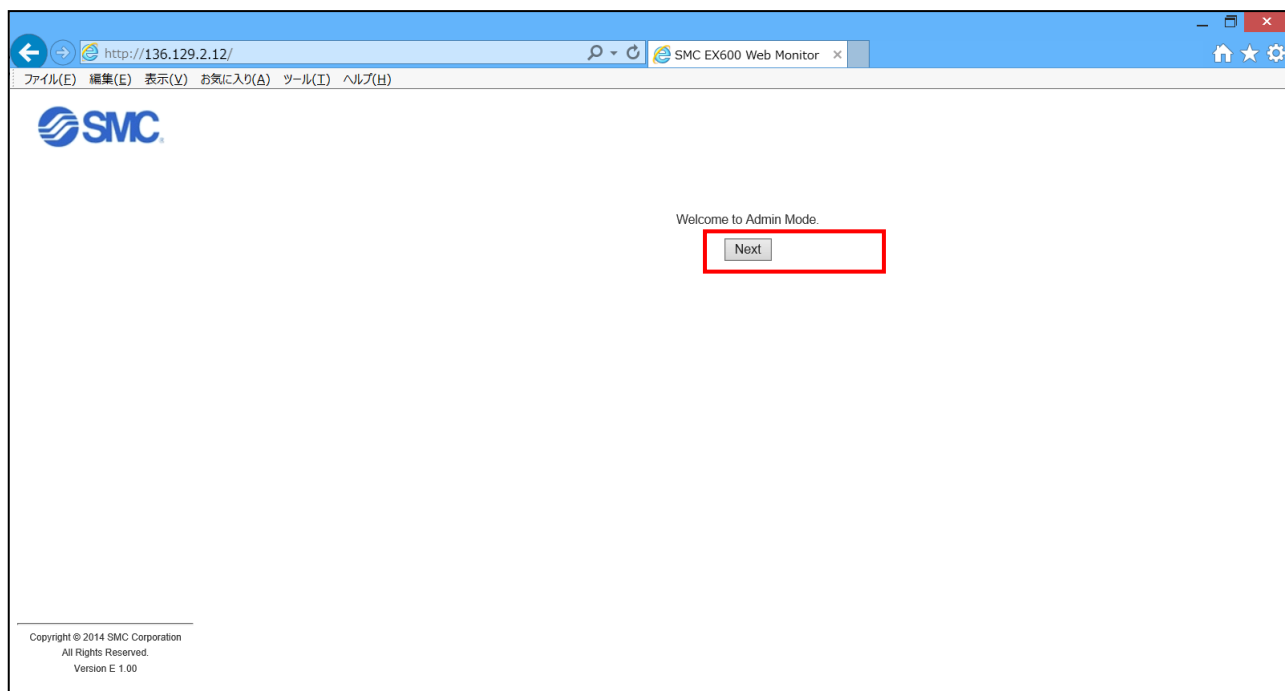
- (1) Open a web browser on the PC.
- (2) Type the IP address of EX600-SEN5-X16. (Ex. <http://136.129.2.12>)
- (3) The EX600 webpage should load after several seconds.

The screenshot shows a web browser window with the URL <http://136.129.2.12/>. The page displays the SMC logo and a login form. A red box highlights the 'Password' input field. A callout bubble points to this field with the text: 'Default setting Password: admin'. Below the password field are two buttons: 'Login' and 'Monitor only'. Two callout bubbles provide instructions: 'When [Login] is selected after inputting Password, the screen is switched to [Admin mode].' and 'When [Monitor only] is selected, the screen is switched to [Monitor only mode]. No Password is required.' The footer of the page contains the text: 'Copyright © 2014 SMC Corporation All Rights Reserved. Version E 1.00'.

Note

Connect one SI unit to one PC.

(4) When [Login] is selected after inputting Password, the screen below is displayed. Press the [Next] button.



(5) After pressing the [Next] button, the [SYSTEM CONFIGURATION STATUS] screen is displayed. This screen will be the TOP screen.

SYSTEM CONFIGURATION STATUS

Total Input Size: 8 byte, Total Output Size: 4 byte

No.	Unit Name	Unit Type	Input Size	Output Size	Diagnostic Status	Force Check
-	Output Power Status	-	2 byte	0 byte	Output Power is ON	-
-	Reserved	-	0 byte	2 byte	-	-
0	EX600-DX#D	16DI	2 byte	0 byte	-	-
1	EX600-DX#D	16DI	2 byte	0 byte	-	-
2	EX600-DX#D	16DI	2 byte	0 byte	-	-
3	EX600-SEN#	16DO	0 byte	2 byte	-	-

SYSTEM DIAGNOSTIC INFORMATION

STATUS LOG

When selecting the Unit Name, I/O monitor screen is displayed.

When the Password is changed and Error Log is cleared, click here.

Click here to logout.

Caution
The screen above shows the case when the unit is connected as shown below.

	No.0	No.1	No.2	No.3
	End plate	DX#D	DX#D	DX#D
				SEN

(6) When unit diagnostics is generated, the diagnostic information is displayed on the [SYSTEM CONFIGURATION STATUS] screen.

The screenshot displays the SMC EX600 Web Monitor interface. At the top, the browser address bar shows 'http://136.129.2.12/'. The main content area is titled 'SYSTEM CONFIGURATION STATUS' and includes a table with columns: No., Unit Name, Unit Type, Input Size, Output Size, Diagnostic Status, and Force Check. The table contains several rows, with the row for 'EX600-DX#D' (No. 1) showing a red 'ERROR' in the Diagnostic Status column. A callout box points to this row with the text: 'The unit which requires a diagnostics can be specified.'

Below the configuration table is the 'SYSTEM DIAGNOSTIC INFORMATION' section. It features a 'STATUS' dropdown menu with 'LOG' selected and highlighted by a red box. A callout box points to this dropdown with the text: 'When selecting [LOG], the error log information is displayed.'

Below the diagnostic information is a table with columns: No., Time, Unit, Ch, and Description. The table contains three entries:

No.	Time	Unit	Ch	Description
1	0:07:54	1	2	Short circuit
2	0:07:52	1	2	Short circuit
3	0:00:02	0	0	Connection fault

Additional interface elements include the SMC logo, 'TOP' link, 'Admin Manager' link, 'LOGOUT' link, and a copyright notice at the bottom left: 'Copyright © 2016 SMC Corporation All Rights Reserved.'

(7) When [Unit Name] is selected on the [SYSTEM CONFIGURATION STATUS] screen, the [I/O MONITOR] screen is displayed.
 (EX600-DX□D)

The screenshot shows the SMC EX600 Web Monitor interface. The browser address bar displays 'http://136.129.1.12/'. The page title is 'SMC EX600 Web Monitor'. The main navigation bar includes 'I/O MONITOR' (highlighted in red), 'UNIT PARAMETER', 'CHANNEL PARAMETER', and 'FORCE MODE'. The page content shows 'No.0 EX600-DX#D 16DI' and 'I/O MONITOR'. A table displays the following data:

CH	ON/OFF	Diagnostic Status
IN0	ON	-
IN1	OFF	-
IN2	OFF	-
IN3	OFF	-
IN4	OFF	-
IN5	OFF	-
IN6	OFF	-
IN7	OFF	-

Below the table, there are links: 'IN0-7 IN8-15 Next >'. A callout box points to the 'ON/OFF' column with the text: 'ON/OFF information can be monitored for each channel.' Another callout box points to the 'IN0-7 IN8-15 Next >' link with the text: 'Select here when selecting the channel to be displayed.' The page also includes 'Admin Manager' and 'LOGOUT' links, and a copyright notice: 'Copyright © 2016 SMC Corporation All Rights Reserved.'

The screenshot shows the SMC EX600 Web Monitor interface. The browser address bar displays 'http://136.129.1.12/'. The page title is 'SMC EX600 Web Monitor'. The main navigation bar includes 'I/O MONITOR' (highlighted in red), 'UNIT PARAMETER', 'CHANNEL PARAMETER', and 'FORCE MODE'. The page content shows 'No.0 EX600-DX#D 16DI' and 'I/O MONITOR'. A table displays the following data:

CH	ON/OFF	Diagnostic Status
IN0	ON	-
IN1	OFF	-
IN2	OFF	Short circuit.
IN3	OFF	Short circuit.
IN4	OFF	-
IN5	OFF	-
IN6	OFF	-
IN7	OFF	-

Below the table, there are links: 'IN0-7 IN8-15 Next >'. A callout box points to the 'Short circuit.' status for IN2 and IN3 with the text: 'Channels which require diagnostic and detailed diagnostic information are displayed.' The page also includes 'Admin Manager' and 'LOGOUT' links, and a copyright notice: 'Copyright © 2016 SMC Corporation All Rights Reserved.'

- (8) Select the [UNIT PARAMETER] tab to display the [UNIT PARAMETER] screen.
(EX600-DX□D)

TOP

Admin Manager

LOGOUT

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Parameter	Status
Inrush Current Filter	Disable <input type="button" value="Disable"/>
Short Circuit Monitor at Power Supply	Enable <input type="button" value="Enable"/>
Input Filtering Time	0.1ms <input type="button" value="v"/>
Input Extension Time	1ms <input type="button" value="v"/>
<input type="button" value="SET"/>	

When the [SET] button is selected after changing the set value, the parameter will be changed.

(9) Select the [CHANNEL PARAMETER] tab to display the [CHANNEL PARAMETER] screen.
 (EX600-DX□D)

TOP

No.0 EX600-DX#D 16DI

CHANNEL PARAMETER

Parameter	IN0		IN1		IN2		IN3	
Input Sensor's ON/OFF Counter	Disable	<input type="button" value="Enable"/>	Disable	<input type="button" value="Enable"/>	Disable	<input type="button" value="Enable"/>	Disable	<input type="button" value="Enable"/>
Value (1K-65000K)	65000	<input type="text"/>	65000	<input type="text"/>	65000	<input type="text"/>	65000	<input type="text"/>
ON/OFF Counter	39916	<input type="text"/>	0	<input type="text"/>	39699	<input type="text"/>	0	<input type="text"/>
	<input type="button" value="SET"/>		<input type="button" value="SET"/>		<input type="button" value="SET"/>		<input type="button" value="SET"/>	

IN0-3 [IN4-7](#) [IN8-11](#) [IN12-15](#) [Next >](#)

Admin Manager

LOGOUT

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When the [SET] button is selected after changing the set value, the parameter will be changed.

(10) Select the [FORCE MODE] tab to display the [FORCE MODE] screen.
(EX600-DX□D)

No.0 EX600-DX#D 16DI

FORCE MODE

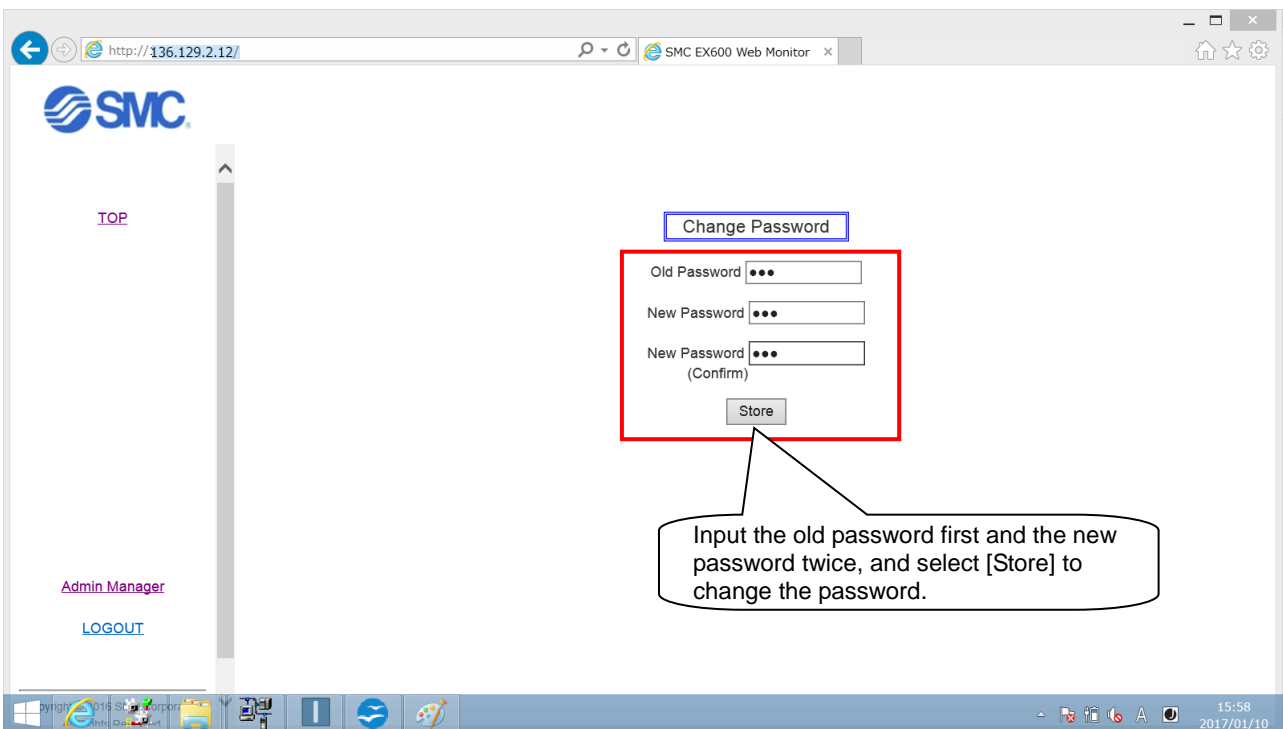
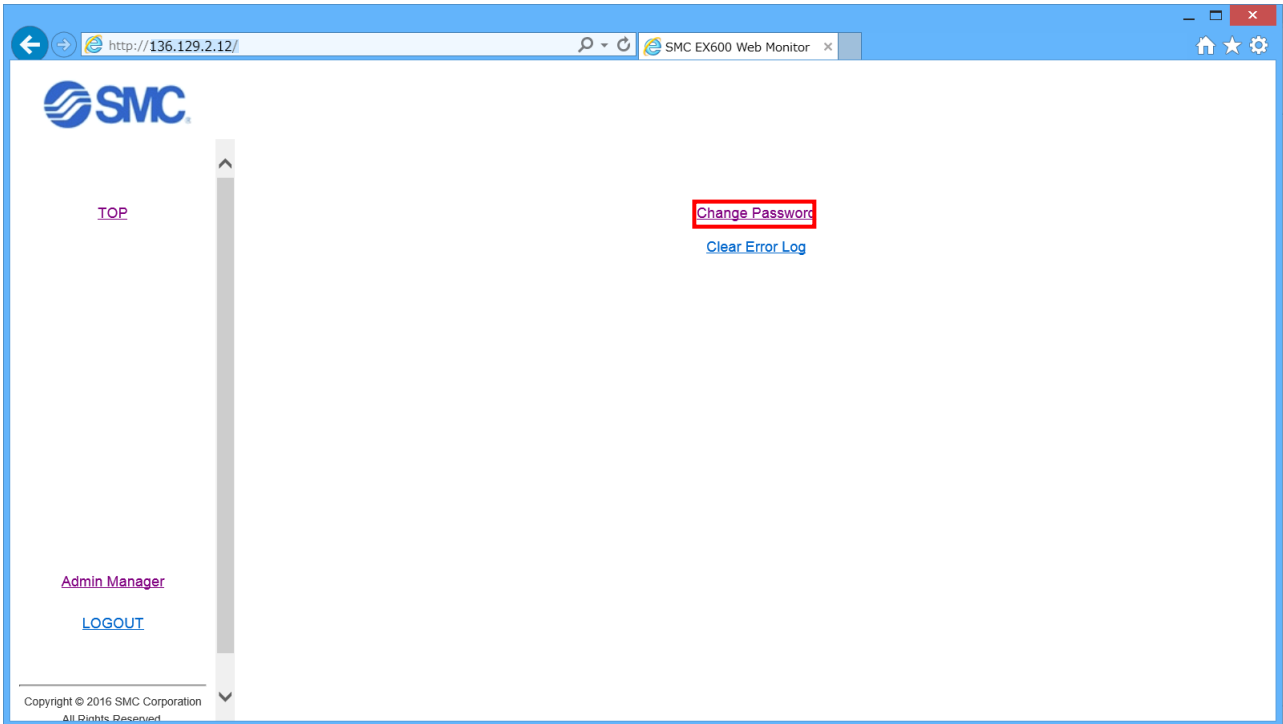
CH	ON/OFF	Force Mode		
IN0	ON	<input type="button" value="ON"/>	<input type="button" value="OFF"/>	<input type="button" value="RESET"/>
IN1	OFF	<input type="button" value="ON"/>	<input type="button" value="OFF"/>	<input type="button" value="RESET"/>
IN2	OFF	<input type="button" value="ON"/>	<input type="button" value="OFF"/>	<input type="button" value="RESET"/>
IN3	OFF	<input type="button" value="ON"/>	<input type="button" value="OFF"/>	<input type="button" value="RESET"/>
IN4	OFF	<input type="button" value="ON"/>	<input type="button" value="OFF"/>	<input type="button" value="RESET"/>
IN5	OFF	<input type="button" value="ON"/>	<input type="button" value="OFF"/>	<input type="button" value="RESET"/>
IN6	OFF	<input type="button" value="ON"/>	<input type="button" value="OFF"/>	<input type="button" value="RESET"/>
IN7	OFF	<input type="button" value="ON"/>	<input type="button" value="OFF"/>	<input type="button" value="RESET"/>

Web ページからのメッセージ

Force ON?
This operation will prohibit host access.
Unexpected actuator movements can result from changing the settings.

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(11) To change the Password, select [Admin Manager] and select [Change Password].



Caution

Do not logout using the [x] button shown at the upper right of the screen.

Accessories

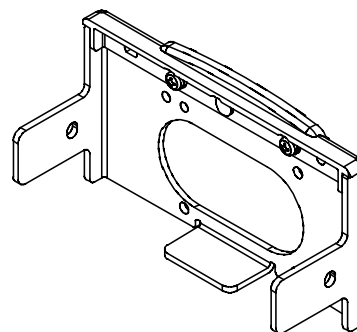
For the selection of accessories, refer to the catalog.

(1) Valve plate

EX600-ZMV1

Enclosed parts: Round head screw (M4 x 6), 2 pcs.

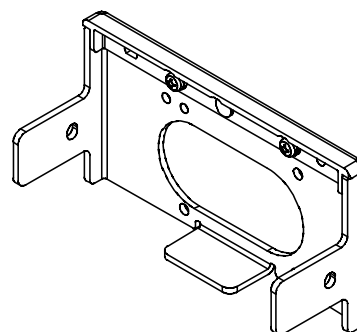
Round head screw (M3 x 8), 4 pcs.



EX600-ZMV2 (Specified for SY series)

Enclosed parts: Round head screw (M4 x 6), 2 pcs.

Round head screw (M3 x 8), 4 pcs.



(2) End plate bracket

EX600-ZMA2

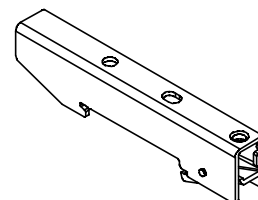
Enclosed parts: Round head screw (M4 x 20), 1 pc.

P tight screw (4 x 14), 2 pcs.

EX600-ZMA3 (Specified for SY series)

Enclosed parts: Round head screw (M4x20) with washer, 1 pc.

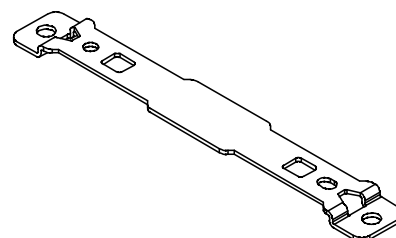
P tight screw (4 x 14), 2 pcs.



(3) Intermediate support bracket

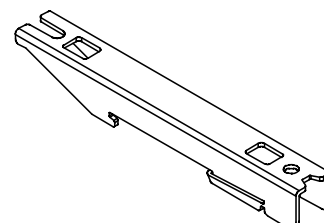
EX600-ZMB1: For direct mounting

Enclosed parts: Round head screw (M4 x 5), 2 pcs.



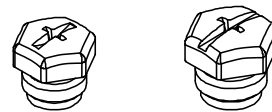
EX600-ZMB2: For DIN rail mounting

Enclosed parts: Round head screw (M4 x 6), 2 pcs.



(4) Seal cap (10 pcs.)

EX9-AWES: For M8
EX9-AWTS: For M12



(5) Marker (1 sheet, 88 pcs.)

EX600-ZT1



(6) EtherNet/IP™ communication cable

PCA-1446566:	Cable with M12 connector, D code, Plug, Straight 5 m, SPEEDCON compatible
EX9-AC010EN-PSRJ:	Cable with M12 connector, D code-RJ45, Plug, Straight 1 m
EX9-AC020EN-PSRJ:	Cable with M12 connector, D code-RJ45, Plug, Straight 2 m
EX9-AC030EN-PSRJ:	Cable with M12 connector, D code-RJ45, Plug, Straight 3 m
EX9-AC050EN-PSRJ:	Cable with M12 connector, D code-RJ45, Plug, Straight 5 m
EX9-AC100EN-PSRJ:	Cable with M12 connector, D code-RJ45, Plug, Straight 10 m

Revision history

Edition A

- EX600-DYPB-X16 added.
- I/O map and hardware configuration are changed.

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Note: Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.

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