

ORIGINAL INSTRUCTIONS

Instruction Manual Fieldbus device – End Plate EX600-ED2 / ED3 / ED4 / ED5



The intended use of this product is to supply power to fieldbus devices which control pneumatic valves and I/O modules.

1 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 10218-1: Manipulating industrial robots -Safety. etc.

• Refer to product catalogue, Operation Manual and Handling Precautions for SMC Products for additional information.

• Keep this manual in a safe place for future reference.

Caution Caution indicates a hazard with a low level of risk w not avoided, could result in minor or moderate injury		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

- Always ensure compliance with relevant safety laws and standards.
- All work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.

2 Specifications

The EX600 range of units can be connected to a fieldbus to realize the reduction of input / output device wiring and a distributed control system. The system communicates with the fieldbus through the SI unit. The EX600-ED# supplies power to the EX600 units.

2.1 General specifications

Item	Specifications		
Ambient temperature	−10 to +50 °C		
Ambient humidity	35 to 85% RH (no condensate)		
Ambient storage temperature	-20 to +60 °C		
Withstand voltage	500 VAC applied for 1 minute		
Insulation resistance	500 VDC, 10 M $ \Omega$ or more		
Enclosure rating	IP67 (manifold assembled)		
Woight	170 g (EX600-ED2 / ED4 / ED5)		
weight	175 g (EX600-ED3)		

2 Specifications (continued)

2.2 Electrical specifications

Model		EX600- ED2-#	EX600- ED3-#	EX600- ED4-#	EX600- ED5-#
Power	PWR IN	M12 (5 pin) B Plug	7/8 inch (5 pin) Plug	M12 (4-pin) A Plug	M12 (4-pin) A Plug
connector	PWR OUT	-	-	M12 (5-pin) A Socket	M12 (5-pin) A Socket
Power supply (Control and input)		24 VDC ±10%, 2 A	24 VDC ±10%, 8 A	24 VDC 4	5 ±10%, A
Power supply (Output)		24 VDC +10/-5%, 2 A	24 VDC +10/-5%, 8 A	24 VDC - 4	+10/-5%, A

*1: All unused connectors must have a seal cap fitted to maintain IP67.

3 Name and function of parts



No	Description	Function	
1	Power connector	Connector for power supply to SI unit and I/O unit.	
2	Fixing holes for direct mounting	Holes for direct mounting.	
3	DIN rail fixing holes	Holes for DIN rail mounting.	
4	F.E. terminal *	Functional Earth terminal - must be connected directly to system earth (ground).	
5	Connector (Not used)	Unused connector. Do not remove seal cap.	

* Individual grounding should be provided close to the product using a short cable.

EX600-ED4 / ED5



No	Description	Function
1	Power connector (PWR IN)	Supplies power for each unit and input/output devices.
2	Power connector (PWR OUT)	Provides power to downstream equipment.
3	Fixing holes for direct mounting	Holes used for direct mounting.
4	DIN rail fixing holes	Holes used for DIN rail mounting.
5	F.E. terminal *	Functional Earth terminal - must be connected directly to system earth (ground).

* Individual grounding should be provided close to the product using a short cable.

4 Assembly

4.1 Assembling the unit

Warning

Do not install the product unless the safety instructions have been read and understood.

 (1) Connect an I/O unit to the end plate. Digital and analogue I/O units can be connected in any order.
Joint bracket screw

tightening torque: 1.5 to 1.6 N•m.

(2) Add more I/O units. Up to 9 I/O units can be connected to one manifold.

5 Installation

Direct mounting

- Mount and tighten the end plate at one end of the unit using M4 screws Tightening torque: 0.7 to 0.8 N•m.
- Fix the end plate at the valve side while referring to the operation manual for the applicable valve series.

DIN rail mounting

- Mount the end plate bracket (EX600-ZMA2) to the end plate at the opposite end to the valves using 2-M4x14 mm screws. Tightening torque: 0.7 to 0.8 N•m.
- For the SY series valves, use end plate bracket EX600-ZMA3.
- 2) Hook the DIN rail mounting groove on to the DIN rail.
- Press the manifold using its side hooked to the DIN rail as a fulcrum until the manifold is locked.
- Fix the manifold by tightening the DIN rail fixing screws on the end plate bracket (M4x 20 mm screws).



Refer to the Operation Manual for the applicable valve series on the SMC website (URL: <u>https://www.smcworld.com</u>) for further installation details and for the mounting method of the valve manifold.

5.1 Environment

Warning

- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
- Do not install in a location subject to vibration or impact in excess of the product's specifications.
- Do not mount in a location exposed to radiant heat that would result in temperatures in excess of the product's specifications.

6 Wiring

- 6.1 Wiring connections
- Connect a suitable cable with M12 (or 7/8") connector.

Regarding the 2 types of power supply

The end plate unit 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 devices connected to the input ports of Digital and Analogue units.
- Power supply for output: Supplying power for equipment connected to the output port of the Digital and Analogue units, and also for the solenoid valve manifold.



6 Wiring (continued)

1) EX600-ED2 Connector Pin Assignment

PWR IN: M12 5-pin Plug B code

Connector	Pin No.	Signal name
2 - 1	1	24 VDC (Output)
	2	0 VDC (Output)
(ဥဝ)	3	24 VDC (Control and input)
200	4	0 VDC (Control and input)
5 - 4	5	F.E.

2) EX600-ED3 Connector Pin Assignment

PWR IN: 7/8 inch 5-pin Plug

Connector	Pin No.	Signal name
Ć	1	0 VDC (Output)
	2	0 VDC (Control and input)
$\begin{pmatrix} 0 & 0 \\ 2 & 4 \end{pmatrix}$	3	F.E.
$\langle \circ_3 \rangle$	4	24 VDC (Control and input)
	5	24 VDC (Output)

3) EX600-ED4 Connector Pin Assignment

PWR IN: M12 4-pin Plug A code

Connector	Pin No.	Signal name
	1	24 VDC (Control and input)
3/0	2	24 VDC (Output)
4\o 0/1	3	0 VDC (Control and input)
	4	0 VDC (Output)

PWR OUT: M12 5-pin Socket A code

Connector	Pin No.	Signal name
. 0	1	24 VDC (Control and input)
1602	2	24 VDC (Output)
	3	0 VDC (Control and input)
4 0 9 3	4	0 VDC (Output)
	5	Not used

4) EX600-ED5 Connector Pin Assignment

PWR IN: M12 4-pin Plug A code

Connector	Pin No.	Signal name
	1	24 VDC (Output)
³ (0 ⁰ ²	2	0 VDC (Output)
4\o 0/1	3	24 VDC (Control and input)
	4	0 VDC (Control and input)

PWR OUT: M12 5-pin Socket A code

Connector	Pin No.	Signal name
. 0	1	24 VDC (Output)
1 6 0 2	2	0 VDC (Output)
	3	24 VDC (Control and input)
4 0 9 3	4	0 VDC (Control and input)
))	5	Not used

Warning

• Be sure to fit a seal cap (EX9-AWTS) on any unused connectors. Proper use of the seal cap enables the enclosure to maintain IP67 specification.

EX600-TF2Z193EN

7 How to Order

Refer to the operation manual on the SMC website (URL: <u>https://www.smcworld.com</u>) for How to order information.

8 Outline Dimensions (mm)

Refer to the operation manual on the SMC website (URL: <u>https://www.smcworld.com</u>) for outline dimensions.

9 Maintenance

9.1 General Maintenance

A Caution

- Not following proper maintenance procedures could cause the product to malfunction and lead to equipment damage.
- If handled improperly, compressed air can be dangerous.
- Maintenance of pneumatic systems should be performed only by qualified personnel.
- Before performing maintenance, turn off the power supply and be sure to cut off the supply pressure. Confirm that the air is released to atmosphere.
- After installation and maintenance, apply operating pressure and power to the equipment and perform appropriate functional and leakage tests to make sure the equipment is installed correctly.
- If any electrical connections are disturbed during maintenance, ensure they are reconnected correctly and safety checks are carried out as required to ensure continued compliance with applicable national regulations.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions
- Stop operation if the product does not function correctly.

10 Limitations of Use

10.1 Limited warranty and Disclaimer/Compliance Requirements Refer to Handling Precautions for SMC Products.

11 Product disposal

This product should not be disposed of as municipal waste. Check your local regulations and guidelines to dispose of this product correctly, in order to reduce the impact on human health and the environment.

12 Contacts

Refer to $\underline{www.smcworld.com}$ or $\underline{www.smc.eu}$ for your local distributor / importer.

SMC Corporation

URL: <u>https://www.smc.eu</u> (Global) <u>https://www.smc.eu</u> (Europe) SMC Corporation, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, Japan Specifications are subject to change without prior notice from the manufacturer. © 2021 SMC Corporation All Rights Reserved. Template DKP50047-F-085M