56-EX500-TF2Z333EN

ORIGINAL INSTRUCTIONS

Instruction Manual
Fieldbus device – SI unit
56-EX500-S103-X52

II 3G Ex ec IIC T5 Gc -10ºC ≤ Ta ≤ 50ºC
II 3D Ex tc IIIC T64ºC Dc IP67

The intended use of the SI unit is for connection to a gateway unit and input devices for the control of pneumatic valves.

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 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.

ATEX Marking Description

II 3G Ex ec IIC T5 Gc -10ºC ≤ Ta ≤ 50ºC
II 3D Ex tc IIIC T64ºC Dc IP67

Equipment Group II	tc - protected by enclosure
Category 3	IIIC - for all types of dust
Gas (G) and Dust (D) environment	T64ºC - Max. surface temperature
Ex - European standards apply	Gc/Dc - Equipment Protection Level
ec – Increased safety	Ta - ambient temperature
IIC - for all types of gas	IP67 - Protection structure
T5 - Temperature classification	

Based on the conformity assessment carried out by SMC Corporation.

Certificate Number: SMC20.0004 X

1 Safety Instructions (continued)

If the Certificate number includes an X, special conditions for safe use apply as follows:-

- Protect the product from sources of heat which can generate surface temperatures greater than the temperature classification.
- Protect the product and cable connections against all impact or mechanical damage using a suitable ATEX compliant enclosure.
- Protect the product from direct sunlight or UV light using a suitable protective cover.
- Do not disconnect the M12 connectors before first switching OFF the power supply.
- Use only ATEX approved connectors and use shielded cable to provide grounding.
- Use only a damp cloth to clean the product to avoid an electrostatic charge.

2 Specifications

General specifications

Item	Specifications
Ambient temperature	-10 to +50 ºC
Ambient humidity	35 to 85% RH (no condensation)
Ambient storage temperature	-20 to +60 ºC
Operating atmosphere	No corrosive gas
Enclosure rating	IP67
Weight	260 g or less
Accessories	Hexagon socket head cap screw (M3 x 30): 2 pcs. Seal cap (for M12 connector socket): 1 pc.

Electrical specifications

Item	Specifications
Output type	PNP / source (negative common)
Number of Outputs	16 or 32 points (internal switch for selection)
Connected load	Solenoid valve with surge voltage suppressor of 24 VDC and 1.0 W or less (manufactured by SMC)
Internal current consumption	50 mA or less
Short circuit protection	Applicable
Load current	Max power supply from GW unit: 1.0 A, Max. external power supply: 1.5 A
Communication system	Gateway distribution system 2 (128 points)

3 Name and function of Individual parts

No	Part	Description
1	Branch connector IN	Branch connection from Gateway unit.
2	Branch connector OUT	Connection to the next unit on the branch line.
3	Display and switch setting cover	LED display to indicate the SI unit status. Switches for setting the output points are under the cover.
4	Ground Terminal (FE)	For functional ground (< 100 ohms).

4 Installation

4.1 Mounting

Secure the SI unit to the valve manifold supply / exhaust block so that there is no gap between them, using M3 x 30 mm screws, with a tightening torque of 0.6 N•m.

Refer to the solenoid valve and manifold catalogue or operation manual for details of the installation.

4.2 Wiring connections

- **Branch Connector (IN)**
  Connect a branch cable from the SI unit and solenoid valve assembly to the Gateway communication connector using an M12 (8 pin) connector cable.
- **Branch Connector (OUT)**
  Connect a cable from the SI unit and solenoid valve assembly to the next device on the branch using an M12 (8 pin) connector cable.
  As each branch cable contains power supply wiring, there is no need to supply power to the SI unit (solenoid valves) or input devices separately.

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. Tightening torque: 0.1 N•m.

4.3 Ground connection

Connect the FE terminal to ground (maximum resistance = 100 ohms).

4.4 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.

5 How to Order

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

6 Outline Dimensions (mm)

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

7 LED Display and Setting

Display		Description
PWR	LED is OFF	Power supply for input and control is OFF
	Green LED is ON	Power supply for input and control is ON
COM	LED is OFF	Communication error with GW unit has occurred
	Green LED is ON	Communication with GW unit is normal
PWR (V)	LED is OFF	Power supply for solenoid valve is OFF
	Green LED is ON	Power supply for solenoid valve is ON

7.1 Switch setting

Setting	Description
16	16 outputs
32	32 outputs (default)

8 Maintenance

8.1 General Maintenance

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.

9 Limitations of Use

9.1 Limited warranty and Disclaimer/Compliance Requirements

Refer to Handling Precautions for SMC Products.

10 Product disposal

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

11 Contacts

Refer to www.smcworld.com or www.smc.eu for your local distributor / importer.

SMC Corporation

URL: https://www.smcworld.com (Global) https://www.smc.eu (Europe)
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