56-EX500-TF2Z332EN

ORIGINAL INSTRUCTIONS

Instruction Manual
Fieldbus device – SI unit
Series 56-EX500-S#01, 56-EX500-Q#01

56-EX500-S#01

II 3G Ex ec IIC T5 Gc 5ºC ≤ Ta ≤ 45ºC
II 3D Ex tc IIIC T52ºC Dc IP67

56-EX500-Q#01

II 3G Ex ec IIC T5 Gc 5ºC ≤ Ta ≤ 45ºC
II 3D Ex tc IIIC T54ºC 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 5ºC ≤ Ta ≤ 45ºC
II 3D Ex tc IIIC T52ºC Dc IP67

Equipment Group II	tc - protected by enclosure
Category 3	IIIC - for all types of dust
Gas (G) and Dust (D) environment	T52ºC - 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:	SMC 20.0004 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	5 to 45 ºC
Ambient humidity	35 to 85% RH (no condensate)
Ambient storage temperature	−25 to +70 ºC
Withstand voltage	1000 VAC applied for 1 minute
Insulation resistance	500 VDC, 2 MΩ or more
Weight	56-EX500-S#01: 115 g 56-EX500-Q#01: 105 g

Electrical specifications

Item	Specifications
Power supply for control and input	24.0 VDC
Power supply for solenoid valves	24.0 VDC
Current for inputs	0.7 A max. per branch
Current for solenoid valves	0.65 A max. (56-EX500-S#01) 0.75 A max. (56-EX500-Q#01)
Current consumption	SI unit internal circuit: 100 mA max.
Connected solenoid valves	Double solenoid: 8 stations max. Single solenoid: 16 stations max.
No. of Outputs	16 Outputs
Output type (option)	PNP / source (negative common) NPN / sink (positive common)
Communication method	Dedicated protocol for SMC, 750 kbps
Branch cable length	5 m max. per branch (10 m total max.)

3 Name and function of Individual parts

- 56-EX500-**S**#01: SI unit for SV series valves

- 56-EX500-**Q**#01: SI unit for SY / VQC / S0700 series valves

No	Part	Description
1	Input connector	Connection for input devices.
2	Branch connector	Connection from Gateway unit.
3	Power LED	Indicates the power supply status.
4	Communication LED	Indicates the communication status.

4 Installation

4.1 Mounting

Secure the SI unit to the valve manifold supply / exhaust block using M3 screws, with a tightening torque of 0.6 N•m.

- **56-EX500-S#01: SI unit for SV series valves**

- **56-EX500-Q#01: SI unit for SY / VQC / S0700 series valves**

4.2 Wiring connections

- **Branch Connector**

  Connect a branch cable from the branch connector ("C2" or "1") on the SI unit and solenoid valve assembly to the Gateway communication connectors using an M12 (8 pin) connector cable.
- **Input Connector**

  Connect a cable from the input connector ("C1" or "0") on the SI unit and solenoid valve assembly to the Input block 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 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 on the SMC website (URL: https://www.smcworld.com) for How to order information.

6 Outline Dimensions (mm)

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

7 LED Display

- LED indication common to both 56-EX500-S#01 and 56-EX500-Q#01

LED		Description
PWR	Green ON	Power supply for control and input is ON
	OFF	Power for control and input not supplied.
COM	Green ON	Receiving data from Gateway.
	OFF	Not receiving data.

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 shall 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.

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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