ORIGINAL INSTRUCTIONS

Instruction Manual
Fieldbus device – Input unit and Input Block
Series 56-EX500-IB1, 56-EX500-IE#

56-EX500-IB1, 56-EX500-IE1/2/3/4

II 3G Ex ec IIC T5 Gc 5ºC ≤ Ta ≤ 45ºC
II 3D Ex tc IIIC T60ºC Dc IP65

56-EX500-IE5/6

II 3G Ex ec IIC T5 Gc 5ºC ≤ Ta ≤ 45ºC
II 3D Ex tc IIIC T66ºC Dc IP65

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 T60ºC Dc IP65

Equipment Group II	tc - protected by enclosure
Category 3	IIIC - for all types of dust
Gas (G) and Dust (D) environment	T60ºC - Max. surface temperature
Ex - European standards apply	Gc/Dc - Equipment Protection Level
ec – Increased safety	Ta - ambient temperature
IIC - for all types of gas	IP65 - Protection structure
T5 - Temperature classification	

Based on the conformity assessment carried out by SMC Corporation.

Certificate Number:	SMC 20.0004 X

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.

1 Safety Instructions (continued)

- 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

Input unit specifications

Item	Specifications
Connection block	PNP / source (negative common) NPN / sink (positive common)
Communication connector	M12 8-pin plug
No. of input blocks	8 blocks max. (16 inputs)
Power supply	24.0 VDC
Current for input block	0.5 A max.
Current consumption	100 mA max.
Short circuit protection	Operates at 1 A typical (power supply cut) Gateway unit resets power OFF and then ON.
Weight	56-EX500-IB1: 100 g

Input block specifications

Item	Specifications
Applicable input type	PNP / source (negative common) NPN / sink (positive common)
Input connector	M8 3-pin or M12 4-pin
No. of inputs	2 inputs (or 8 inputs for 56-EX500-IE5/6)
Power supply	24.0 VDC
Current for input	30 mA max. per input
Weight	56-EX500-IE1/2: 20 g (M8 x 2) 56-EX500-IE3/4: 40 g (M8 x 2) 56-EX500-IE5/6: 55 g (M8 x 8)

3 Name and function of Individual parts

4 Installation

4.1 Mounting

- Push the input unit and end block together firmly once they are mounted on the DIN rail to ensure a good seal between all input blocks.
- Tighten the two screws (a) to secure the assembly on the DIN rail. Tighten the screws to the specified tightening torque of 0.6 N•m.

4.2 Wiring connections

- **Input Block connector**

Connector		Pin No.	Signal name
M8 3-pin socket	M12 4-pin socket		
		1	24 V
		2	Input 2
		3	0 V
		4	Input 1

Internal wiring of the M12 input block provides 2 inputs on each connector, however pins 2 and 4 are connected together on each block.

⚠ Warning

- Be sure to fit a seal cap on any unused connectors.
  Proper use of the seal cap enables the enclosure to maintain IP65 specification (seal cap EX9-AWES for M8 and EX9-AWTS for M12). Tightening torque: 0.05 N•m for M8 and 0.1 N•m for M12.

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 Limitations of Use

7.1 Limited warranty and Disclaimer/Compliance Requirements

Refer to Handling Precautions for SMC Products.

8 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.

9 LED Display

LED		Description
Power LED	Green ON	Power supply for control and input is ON.
	Green flashing	In short circuit protection mode (abnormal status). When the short circuit protection is operating the power is not supplied.
	OFF	Power for control and input is not supplied.
Indicator LED	Green ON	Sensor input signal ON.
	OFF	Sensor input signal OFF.

10 Maintenance

10.1 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.

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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