EX500-TFT33

Installation & Maintenance Manual
Fieldbus system
EX500-DX□□

1 Safety Instructions

This manual contains essential information for the protection of users and others from possible injury and/or equipment damage.
•Read this manual before using the product, to ensure correct handling, and read the manuals of related apparatus before use.
•Keep this manual in a safe place for future reference.
•These instructions indicate the level of potential hazard by label of "Caution", "Warning" or "Danger", followed by important safety information which must be carefully followed.
•To ensure safety of personnel and equipment the safety instructions in this manual and the product catalogue must be observed, along with other relevant safety practices.

⚠ **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.

This product is class A equipment that is intended for use in an industrial environment.
There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbances.

⚠ Warning

•**Do not disassemble, modify (including changing the printed circuit board) or repair.**
An injury or failure can result.
•**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.

1 Safety Instructions (Continued)

⚠ Caution

•**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 Serial System.**
Individual grounding should be provided close to the product with a short cable.

Refer to the operation manual on the SMC website (URL http ://www.smcworld.com) for more information about safety instructions.

2 Specifications

Gateway distributed system Ⅱ (128 points) specifications

Item	Specification
Number of inputs and outputs	128 inputs/128 outputs
Number of branch ports	4 (Input: Max. 32 points/Output: Max. 32 points per branch)
Number of connected slaves	Max. 16 (Input unit: 2 pcs./SI unit: 2 pcs. per branch)
Branch cable length	Total length 20 m or less per branch

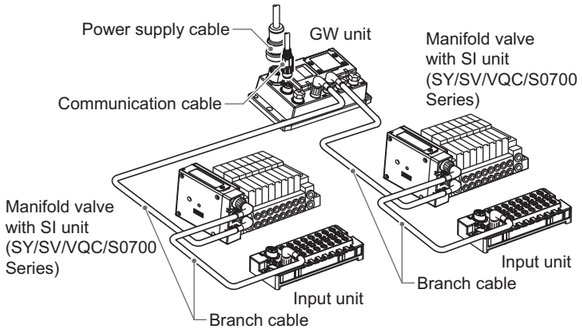
Input unit specifications

Models	EX500-DX□A	EX500-DX□B
Input type	PNP sensor input	
Number of inputs	16 inputs	
Voltage for input equipment	24 VDC	
Current for input equipment	Max. 1.3 A/unit	
Internal current consumption	200 mA or less (including input current when the input signal is ON)	
Sensor connector	M8 connector (3 pin, socket)	M12 connector (5 pin, socket)
Short circuit protection	Applicable	
Enclosure rating	IP67	
Ambient temperature range	Operation: -10 to 50 °C, Storage: -20 to 60 °C (no condensation or freezing)	
Operating humidity range	Operation, Storage: 35 to 85%RH (No condensation)	
Operating atmosphere	No corrosive gas or dust	
Weight	250 g	450 g
Accessories	Seal cap (for M8 socket): 16 pcs. Seal cap (for M12 socket): 1 pc.	Seal cap (for M12 socket): 17 pcs.

Refer to the product catalogue or SMC website (URL http://www.smcworld.com) for more information about product specifications.

3 Product Summary

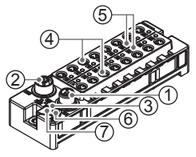
○**System configuration**



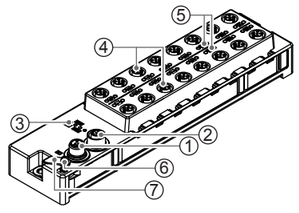
The EX500 range of units can be connected to open fieldbus to realize the reduction of input or output device wiring and the distributed control system.
One branch of manifold valves/input units can be connected to 32 outputs/32 inputs.
Up to 4 branches can be connected (total 128 outputs/128 inputs).

4 Summary of Product Parts

•EX500-DX□A



•EX500-DX□B

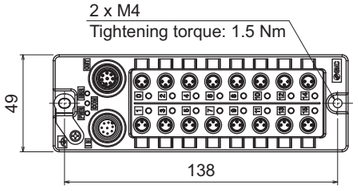


No.	Description	Application
1	Branch connector (IN)	Connector for branch cable (with M12 connector) from the GW unit.
2	Branch connector (OUT)	Connector for branch cable (with M12 connector) to the next unit on the branch line.
3	Status LED	LED display to indicate the input unit status.
4	Sensor connector	Connector for sensor.
5	Sensor status LED	Displays the sensor signal status.
6	Grounding terminal	Used for functional grounding. (M3 thread) (It is recommended to ground with resistance of 100 ohms or less)
7	Grounding bracket	Connect the mounting hole to the grounding terminal.

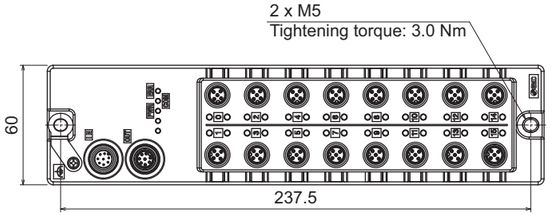
∗: Seal cap is provided.

5 Mounting and Installation

•**EX500-DX□A**
Install the product using 2 M4 screws x 20 mm minimum with a head ø8 maximum.



•**EX500-DX□B**
Install the product using 2 M5 screws x 20 mm minimum with a head ø9 to ø11.



∗: The mounting hole on the branch connector side is electrically connected to the ground terminal with the grounding metal fittings.

■**Wiring**

1. Branch wiring
Select the specified branch cable below.

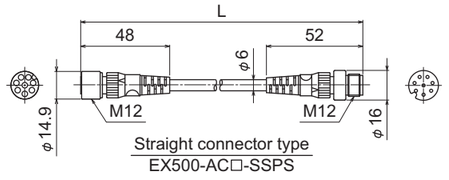
How to order: EX500-AC 030 - SSPS

Cable length (L)

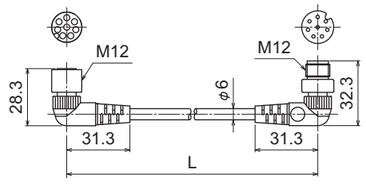
003	0.3 [m]
005	0.5 [m]
010	1 [m]
030	3 [m]
050	5 [m]
100	10 [m]

Connector

SSPS	Socket side: Straight Plug side: Straight
SAPA	Socket side: Angled Plug side: Angled



Straight connector type
EX500-AC□-SSPS



Angled connector type
EX500-AC□-SAPA

(unit: mm)

Minimum acceptable cable bending radius: 40 mm (fixed)

5 Mounting and Installation (Continued)

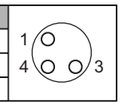
2. Sensor wiring
Connect the sensors to the sensor connectors.

Pin layout of the sensor connector

•EX500-DX□A

M8 connector (3 pin, socket)

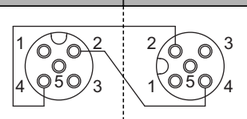
No.	Description
1	Power supply (24 VDC)
3	Power supply (0 VDC)
4	Input



•EX500-DX□B

M12 connector (5 pin, socket)

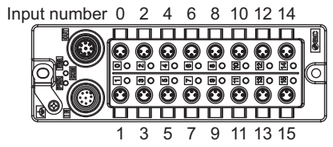
No.	Description	Even number: 0 to 14	Odd number: 1 to 15
1	Power supply (24 VDC)		
2	(Input) ∗		
3	Power supply (0 VDC)		
4	Input		
5	FE		



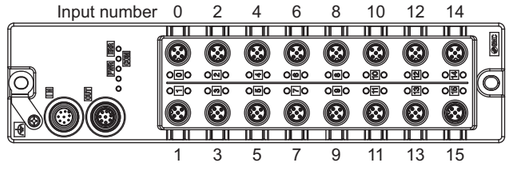
∗: Pin No.2 of the M12 sensor connector is internally connected to pin No.4 of the adjacent connector. (for example, the input connector "0" pin No.4 is connected to input connector "1" pin No.2).

Correspondence between the input number and input.
The input number is assigned from 0 to 15 from the branch connector side.

•EX500-DX□A

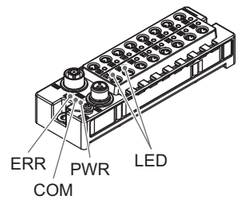


•EX500-DX□B

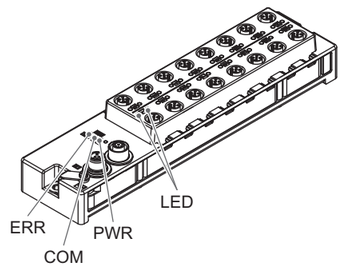


6 LED Display

•EX500-DX□A



•EX500-DX□B



Display	Description	
PWR	LED is OFF	The 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
ERR	LED is OFF	Normal operation
	Green LED is ON	Short circuit detection
LED	LED is OFF	Sensor signal input is OFF
	Green LED is ON	Sensor signal input is ON

7 Maintenance

•Maintenance should be performed according to the Safety Instructions.
•Perform regular maintenance and inspections.
There is a risk of unexpected malfunction.
•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.

Refer to the SMC website (URL http://www.smcworld.com) to obtain more detailed information about maintenance.

8 How to Order

EX500-DX P A

•Connector type

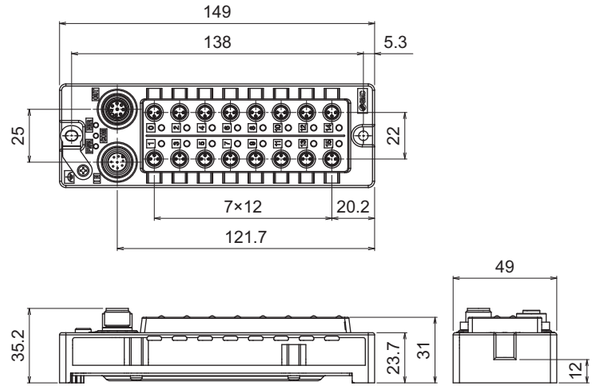
A	M8, 3 pin
B	M12, 5 pin

•Input type

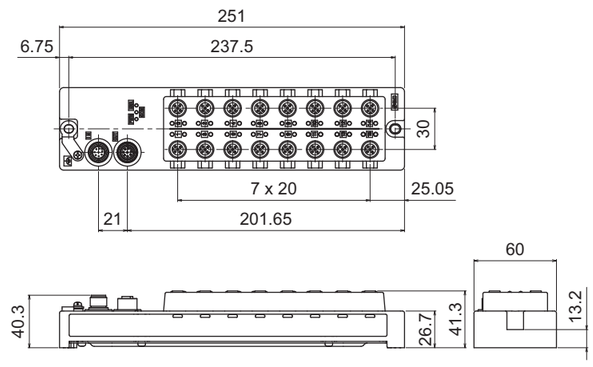
P	PNP sensor input

9 Outline Dimensions (mm)

•EX500-DX□A



•EX500-DX□B



10 Contacts

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BELGIUM	(32) 3 355 1464	LITHUANIA	(370) 5 264 8126
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CZECH REP.	(420) 541 424 611	NORWAY	(47) 67 12 90 20
DENMARK	(45) 7025 2900	POLAND	(48) 22 211 9600
ESTONIA	(372) 651 0370	PORTUGAL	(351) 21 471 1880
FINLAND	(358) 207 513513	ROMANIA	(40) 21 320 5111
FRANCE	(33) 1 6476 1000	SLOVAKIA	(421) 2 444 56725
GERMANY	(49) 6103 4020	SLOVENIA	(386) 73 885 412
GREECE	(30) 210 271 7265	SPAIN	(34) 945 184 100
HUNGARY	(36) 23 511 390	SWEDEN	(46) 8 603 1200
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SMC Corporation

URL http://www.smcworld.com (Global) http://www.smceu.com (Europe)

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