

Fieldbus device Operation Manual



EX250 Series for AS-Interface



Thank you for purchasing an SMC EX250 Series Fieldbus device (Hereinafter referred to as "SI unit"). Please read this manual carefully before operating the product and make sure you understand its capabilities and limitations. Please keep this manual handy for future reference.

To obtain more detailed information about operating this product, please refer to the SMC website (URL <http://www.smcworld.com>) or contact SMC directly.

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) and other safety regulations.

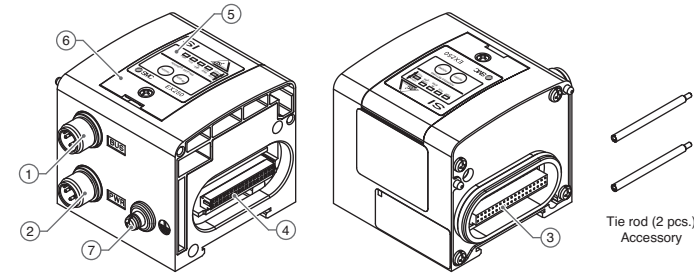
- Caution:** CAUTION indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
- Warning:** WARNING indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
- Danger:** DANGER indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

Operator

- ◆ This operation manual is intended for those who have knowledge of machinery using pneumatic equipment, and have sufficient knowledge of assembly, operation and maintenance of such equipment. Only those persons are allowed to perform assembly, operation and maintenance.
- ◆ Read and understand this operation manual carefully before assembling, operating or providing maintenance to the product.

Summary of Product elements

<EX250-SAS3/-SAS5/-SAS7/-SAS9>



No.	Element	Description
1	Communication connector	Sends or receives the communication signals via AS-Interface line.
2	Power supply connector for output equipment *	Supplies power to the solenoid valve, output block, etc.
3	Input block connector	Connects the input block.
4	Output block connector	Connects the solenoid valve or output block, etc.
5	Display window	Displays the status of the SI unit with LEDs.
6	Switch cover	Sets the address, etc. with the switch inside.
7	Grounding terminal (FE) **	Used for grounding.

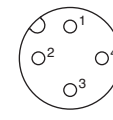
*1: Available only for EX250-SAS3/-SAS5.

Connecting cables

Select the appropriate cables to mate with the connectors mounted on the SI unit.

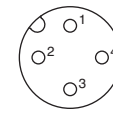
EX250-SAS3/-SAS5

•Communication connector: M12 4-pin, plug



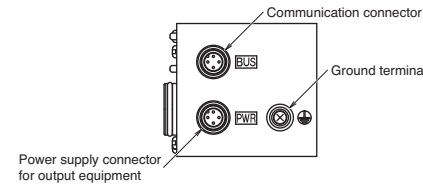
No.	Description	Function
1	AS-i +	AS-Interface line (+)
2	(0 V)	Power supply for output equipment (-)
3	AS-i -	AS-Interface line (-)
4	(24 V)	Power supply for output equipment (+)

•Power supply connector for output equipment: M12 4-pin, plug

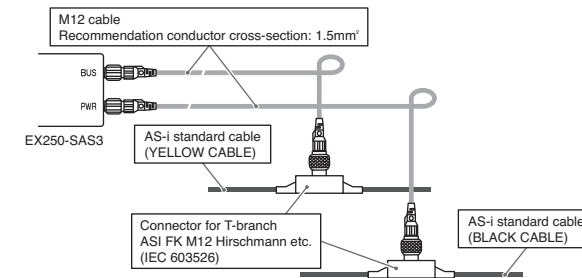


No.	Description	Function
1	24 V	Power supply for output equipment (+)
2	N.C.	Unused
3	0 V	Power supply for output equipment (-)
4	N.C.	Unused

*: Connected inside the SI unit.



•Connection example



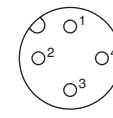
The M12 cable, AS-i standard cable and connector for T-branch are not supplied by SMC.

Contact each manufacturer for the catalogue details etc.

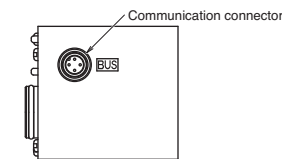
Wire the cable for AS-Interface line so that the total voltage drop is 3 V or less.

EX250-SAS7/-SAS9

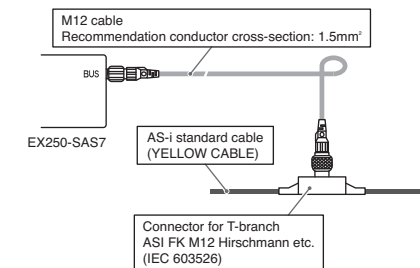
•Communication connector: M12 4-pin, plug



No.	Description	Function
1	AS-i +	AS-Interface line (+)
2	(0 V)	RESERVE
3	AS-i -	AS-Interface line (-)
4	(24 V)	RESERVE



•Connection example



The M12 cable, AS-i standard cable and connector for T-branch are not supplied by SMC.

Contact each manufacturer for the catalogue details etc.

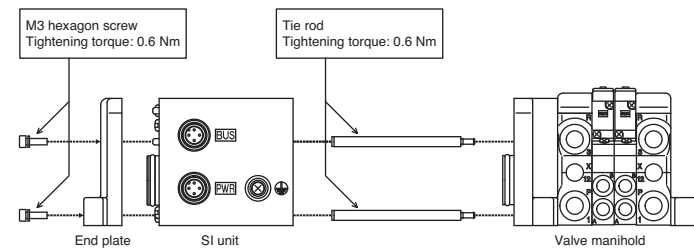
Wire the cable for AS-Interface line so that the total voltage drop is 3 V or less.

Installation

General instructions on installation and maintenance

Connect valve manifold to the SI unit. Connectable valve manifolds are the same as for EX250 series SI unit. Refer to the EX250 series valve manifold section in the valve catalogue for valve manifold dimensions.

Assembly and disassembly of the SI unit



Addition of input block

- Remove the screws from the end plate to remove the plate.
- Mount the additional tie rods (supplied with the input block).
- Connect additional input block.
- Re-mount the end plate that was removed, and tighten the screws to the specified tightening torque. (0.6 Nm)

Replacing the SI unit

- Remove the screws from the end plate and release the connection with the valve unit.
- Replace the SI unit. (There is no need to remove the tie rod.)
- Re-mount the input block and end plate that was removed, and tighten the screws to the specified tightening torque. (0.6 Nm)

Precautions for maintenance

- (1) Turn off the power supply completely.
- (2) Check that there is no foreign matter inside the unit.
- (3) Check that there is no damage and no foreign matter on the gasket.
- (4) Tighten the screws to the specified torque.

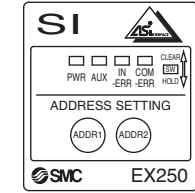
If the unit is not assembled correctly, this may cause product failure due to foreign matter such as liquid and dust which may get into the unit.

Setting

- Address setting
- HOLD/CLEAR setting
- Over Current Protection setting SW
- Address setting procedure via the AS-i line

To set this function, refer to SMC website (URL <http://www.smcworld.com>) for more detailed information or contact us.

LED Indication



LED	LED condition	Description	
		EX250-SAS3/-SAS5	EX250-SAS7/-SAS9
PWR	Green LED is ON	Indicates that the power supply for AS-Interface line is turned ON.	
AUX	Green LED is ON	Indicates that the power supply for output equipment is turned ON.	(LED is OFF at normal condition)
IN-ERR	Red LED is ON	Indicates that an input power supply over current is detected. * (LED is OFF at normal condition)	
	Red LED is flashing	Indicates a communication error. (LED is OFF at normal condition)	
COM-ERR	Red LED is ON	Indicates a communication error. (LED is OFF at normal condition)	
	Red LED is flashing	Indicates peripheral equipment error. * (Over current of input power, blown fuse)	

*1: EX250-SAS3/-SAS5: Input block
EX250-SAS7/-SAS9: Input block, Output block, Solenoid valve

Safety Instructions

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.

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 safety and noise resistance of the Fieldbus system. Individual grounding should be provided close to the product with a short cable.

NOTE

- When conformity to UL is necessary the SI unit must be used with a UL1310 Class2 power supply.

Troubleshooting

Technical documentation giving detailed troubleshooting information can be found on the SMC website (URL <http://www.smcworld.com>).

Specifications

Connected load: 24 VDC Solenoid valve with surge voltage suppressor of 1.5 W or less (manufactured by SMC)
Current consumption of power supply for SI unit operation: 0.1 A max.
Ambient temperature for operation: 5 to 45 °C
Ambient temperature for storage: -20 to 60 °C
Pollution degree 3: (UL508)

Technical documentation giving detailed specification information can be found on the SMC website (URL <http://www.smcworld.com>).

Outline Dimensions

Technical documentation giving detailed outline dimensions information can be found on the SMC website (URL <http://www.smcworld.com>).

SMC Corporation URL <http://www.smcworld.com>

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Note: Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.
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