



Installation & Maintenance Manual

Analogue Input Module

Type EX245-AX1/2-X38



Safety Instructions

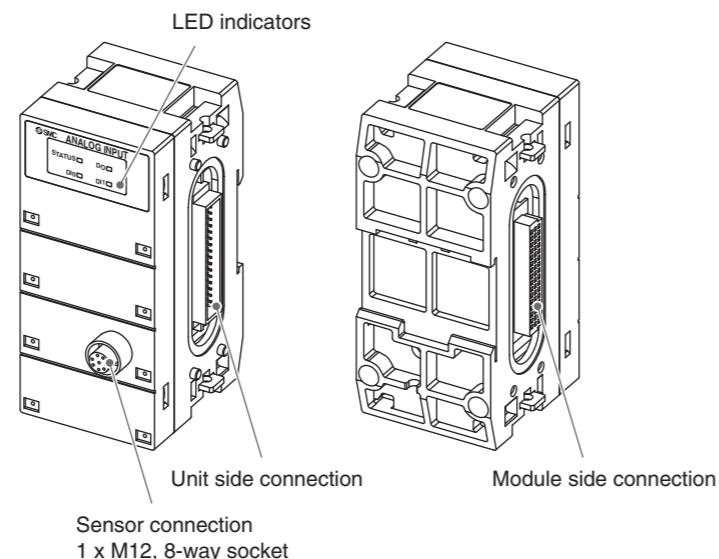
These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution", "Warning" or "Danger". They are all important notes for safety and must be followed in addition to International standards (ISO/IEC), Japan Industrial Standards (JIS) and other safety regulations. 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	Operator error could result in injury or equipment damage.
Warning	Operator error could result in serious injury or loss of life.
Danger	In extreme conditions, there is a possibility of serious injury or loss of life.

Names and Functions of Individual Parts

Parts and description

- Sensor connection
To connect the sensor.
- Unit side connection
To connect to the SI unit or the previous module.
- Module side connection
To connect to the next module or the End plate.
- LED indicators
To indicate the status of the sensors.



Warning

- Do not disassemble, modify (including changing of 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.

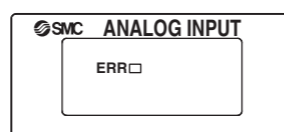
Safety cannot be assured in the case of unexpected malfunction.

- Provide grounding to assure the safety and noise resistance of the SI unit.

Individual grounding should be provided close to the product with a short cable.

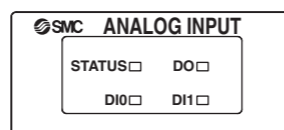
LED indicators

•EX245-AX1-X38



ERR	Description
OFF	No error.
Red ON	Short circuit or over/under-voltage is detected.

•EX245-AX2-X38

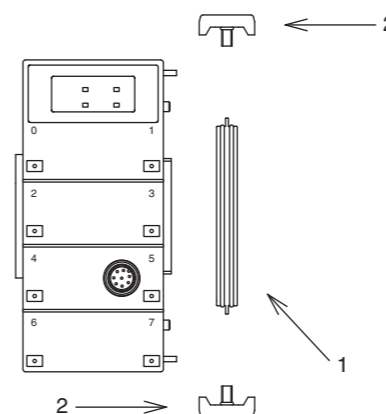


Designation	Description	
STATUS	OFF	Analogue input current is below the permissible level (< 3.2 mA).
	Green ON	Analogue input current is within the permissible range (3.2 to 21.5 mA).
	Red flashing	Analogue input current is above the permissible level (> 21.5 mA).
	Red ON	Short circuit is detected.
DO	OFF	Digital output is not activated.
	Green ON	Digital output is activated.
DIO	OFF	Digital input 0 is not activated.
	Green ON	Digital input 0 is activated.
DI1	OFF	Digital input 1 is not activated.
	Green ON	Digital input 1 is activated.

Installation

Connect the modules with the 2 modular adaptor assemblies and a joint assembly.

- 1 x Joint assembly
- 2 x Modular adaptor assembly (torque=1.3 Nm)



Caution

- For a protection rating of IP65 to be ensured, modular adaptor assemblies and joint assembly must be correctly installed between each module.
- To prevent the modules and assemblies being damaged, apply the recommended tightening torque.

Wiring

Pin allocation of the M12, 8-way sockets connectors as shown in the following table:

Pin allocation of the connector for EX245-AX1-X38

Pin	Allocation	View of connector (module side)
1	N.C.	
2	24 V (US1)	
3	0 V (US1)	
4	0 V (US1)	
5	AI (analogue input signal)	
6	N.C.	
7	N.C.	
8	N.C.	

Pin allocation of the connector for EX245-AX2-X38

Pin	Allocation	View of connector (module side)
1	DI (input signal "1")	
2	24 V (US1)	
3	0 V (US1)	
4	N.C.	
5	DO (output signal)	
6	Analogue input (+)	
7	Analogue input (-)	
8	DI (input signal "0")	

Caution

- To prevent damage, all power for the SI Unit and modules must be turned off (i.e. de-energized) before the modules are installed or removed.
- For a protection rating of IP65 to be ensured, sockets which are not used must be closed with M12 covering caps.
- For a protection rating of IP65 to be ensured, all covering caps must be screwed down correctly after all wiring and settings have been completed.

Troubleshooting

Troubleshooting for EX245-AX1-X38

No.	Problem	Possible cause	Remedy
1	Correct measured value cannot be received from sensor.	Incorrect wiring.	Check the wiring and pin numbers.
		US1 is not present or below the dropout level (< 17 VDC approx).	Check the supply for the sensors.
		Sensor is faulty.	Check the sensor.
2	ERR indicator red light is ON.	<ul style="list-style-type: none"> •Connector has a short circuit. •Over-voltage (> +11 V approx). •Under-voltage (< -11 V approx). 	<ul style="list-style-type: none"> •Check the wiring and pin numbers. •Check the sensor.

Troubleshooting for EX245-AX2-X38

No.	Problem	Possible cause	Remedy
1	The identifiers of EX245-AX2-X38 are not present in the DP master's software.	The version of GSD is not compatible.	Check the version of GSD file.
2	Correct measured value cannot be received from sensor.	Incorrect wiring.	Check the wiring and pin numbers.
		US1 is not present or below the dropout level (< 17 VDC approx).	Check the supply for the sensors.
		Sensor is faulty.	Check the sensor.
3	The load is not operating.	Incorrect wiring.	Check the wiring and pin numbers.
		US1 is not present or below the dropout level (< 17 VDC approx).	Check the supply for the sensors.
		The load is faulty.	Check the load.

4	STATUS indicator red light is ON.	Connector has a short circuit.	<ul style="list-style-type: none"> •Check the wiring and pin numbers. •Check the sensor.
5	STATUS indicator is OFF.	Analogue input current is below the permissible level (< 3.2 mA).	<ul style="list-style-type: none"> •Check the wiring and pin numbers. •Check the sensor.
6	STATUS indicator red light is flashing.	Analogue input current is above the permissible level (> 21.5 mA).	<ul style="list-style-type: none"> •Check the wiring and pin numbers. •Check the sensor.

Specifications

Refer to the operation manual for this product.

Outline with Dimensions (in mm)

Refer to the operation manual for this product.

Contact

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