

Please read this manual carefully before operating the product and make sure you understand its capabilities and limitations.

To obtain the operation manual and the Declaration of Conformity about this product, please refer to the SMC website (URL <https://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

- ◆The 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 the operation manual carefully before assembling, operating or providing maintenance to the product.

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

- When handling the unit or assembling/replacing units:
 - Do not touch the sharp metal parts of the connector or plug for connecting units.
 - Take care not to hit your hand when disassembling the unit. The connecting portions of the unit are firmly joined with seals.
 - When joining units, take care not to get fingers caught between units. An injury can result.
- 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 Fieldbus system. Individual grounding should be provided close to the product with a short cable.

NOTE

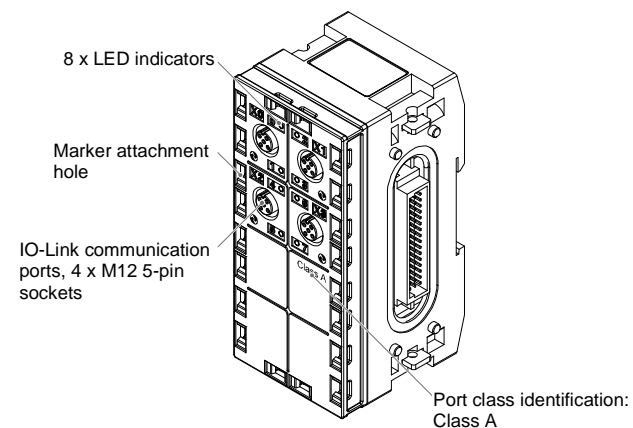
For UL conformity a DC power supply meeting the requirements of UL1310 Class 2 must be used. For other applications a SELV or PELV DC power supply should be used.

Maintenance

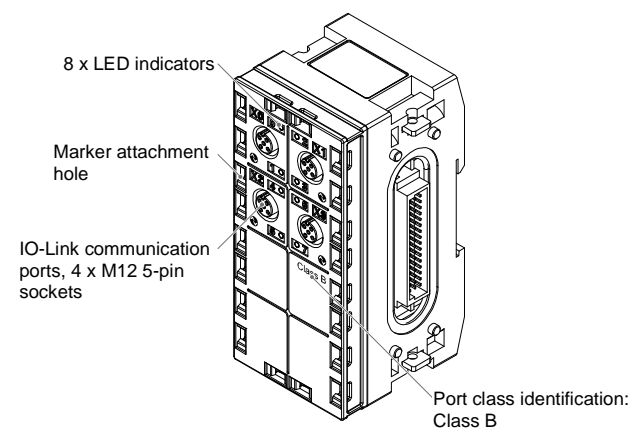
- Maintenance should be performed according to the operation manual.
- Turn off the power supply, stop the supplied air, exhaust the residual pressure and verify the release of air before performing maintenance. There is risk of unexpected malfunction.

Summary of Product parts

EX245-LA1



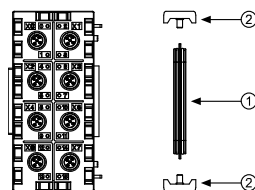
EX245-LB1



Mounting and Installation

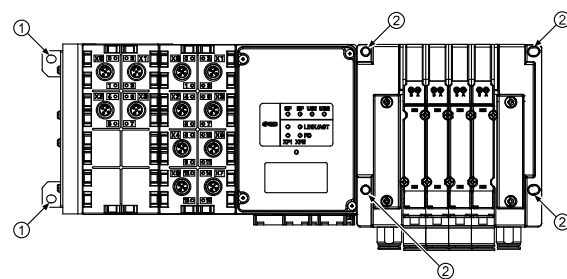
Installation

- Module connection
Connect the SI Unit, the modules and the End plate using the 2 modular adaptor assemblies and a joint assembly.
- ① 1 x Joint assembly
- ② 2 x Modular adaptor assembly (hexagonal socket wrench size 2.5 mm, torque = 1.3 N•m)



Mounting

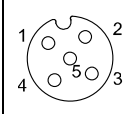
- To prevent the manifold components being damaged, apply the recommended tightening torque.
- Mount the manifold using the 6 base mounting positions with screws. Required screws are as follows:
 - ① 2 x M5 (End plate: torque = 1.5 N•m)
 - ② 4 x M* (Valve manifold: refer to valve manifold catalogue)



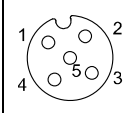
Wiring

Pin allocation of the M12, 5-pins socket connector as shown below:

EX245-LA1

| Configuration | Pin number | Signal name | Description/Power source |
|---|------------|-------------|-------------------------------------|
|  | 1 | L+ | 24 V/US1 |
| | 2 | I/Q | Digital input/US1 |
| | 3 | L- | 0 V/US1 |
| | 4 | C/Q | IO-Link communication, DI or DO/US1 |
| | 5 | N.C. | Not connected |

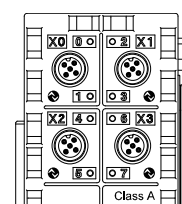
EX245-LB1

| Configuration | Pin number | Signal name | Description/Power source |
|---|------------|-------------|-------------------------------------|
|  | 1 | L+ | 24 V/US1 |
| | 2 | P24 | 24 V/US2 |
| | 3 | L- | 0 V/US1 |
| | 4 | C/Q | IO-Link communication, DI or DO/US1 |
| | 5 | N24 | 0 V/US2 |

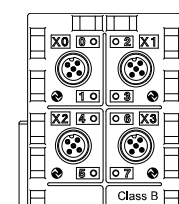
LED Display

The status indicators are arranged on the EX245-LA1 and EX245-LB1 as shown in the illustrations below.


EX245-LA1



EX245-LB1



LED indicators

| Port No. |  | LED No. | LED No. | |
|-----------|--|---------|------------|------------|
| | | | 0, 2, 4, 6 | 1, 3, 5, 7 |
| EX245-LA1 | | C/Q | I/Q | |
| EX245-LB1 | | C/Q | P24 | |

C/Q LED

| Function | LED status | Description |
|-------------|------------------------|--|
| Port | OFF | Port invalid |
| Deactivated | Red ON | Short circuit detection (L+) |
| IO-Link | Flashing Green at 1 Hz | IO-Link device disconnected |
| | Flashing Green at 2 Hz | Either of the following conditions are detected: <ul style="list-style-type: none"> •Connected IO-Link device matching error •Data size error •Data storage writing error |
| | Green ON | IO-Link COM mode |
| DI | Red ON | Short circuit is detected |
| | OFF | Input is not activated |
| DO | Orange ON | Input is activated |
| | Red ON | Short circuit is detected |
| | OFF | Output is not activated |
| DO | Orange ON | Output is activated |
| | Red ON | Short circuit is detected |

I/Q LED (EX245-LA1)

| Function | LED status | Description |
|-----------------|------------|----------------------|
| I/Q | OFF | I/Q Input signal OFF |
| (Digital Input) | Orange ON | I/Q Input signal ON |

P24 LED (EX245-LB1)

| Function | LED status | Description |
|-----------------------|------------|--------------------------------|
| P24 | OFF | P24 Power supply OFF |
| (Power supply output) | Green ON | P24 Power supply for output ON |
| | Red ON | Short circuit (P24) |

Refer to the product catalogue or operation manual to obtain more detailed information about product specifications.

Troubleshooting

Refer to the LED Display. Refer to the operation manual to obtain more detailed information about troubleshooting.

Specification

| Model | EX245-LA1 | EX245-LB1 | | |
|---|---|--|-------------|-------------|
| IO-Link port type | Class A | Class B | | |
| Communication mode | COM1 (4.8 kbps) COM2 (38.4 kbps) COM3 (230.4 kbps) Depending on connected sensor/actuator | | | |
| IO-Link version | Version 1.1 | | | |
| Number of IO-Link ports | 4 | | | |
| Compatible SI unit (Protocol) | EX245-SPN1A/2A/3A (PROFINET) | | | |
| Sensor supply current per connector ("L+" and "L-") | 0.5 A/connector (2 A/module) | 0.5 A/connector (1 A/module) | | |
| Output supply current per connector ("P24" and "N24") | - | 1.6 A/Port (3 A/module) | | |
| Digital Input | Pin number | 2 | 4 | 4 |
| | Input type | PNP | | |
| Digital Input | Protection | short-circuit | | |
| | Rated input current | Typ. 2.5 mA | Typ. 5.8 mA | Typ. 5.8 mA |
| Digital Input | ON voltage | 13 V or more | | |
| | OFF voltage | 8 V or less | | |
| Digital Output | Pin number | 4 | | |
| | Output type | PNP | | |
| Digital Output | Max. load current | 0.25 A/output (Supplied from power supply for control and input) | | |
| | Protection | short-circuit | | |
| Protection class | IP65 rating to IEC 60529 (when fully installed or fitted with protective cover) (IP rating is outside range for UL/cUL certified) | | | |
| Ambient temperature (operation) | -10 to 50 °C (max. surrounding air temperature: 50 °C) | | | |
| Ambient temperature (storage) | -20 to 60 °C | | | |

Refer to the product catalogue or operation manual to obtain more detailed information about product specifications.

Outline with Dimensions

Refer to the product catalogue or operation manual to obtain more detailed information about outline dimensions.

Limitations of Use

Limited warranty and disclaimer/compliance requirements

Refer to Handling Precautions for SMC Products.

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.

SMC Corporation

URL: <https://www.smcworld.com> (Global) <https://www.smc.eu> (Europe)
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