



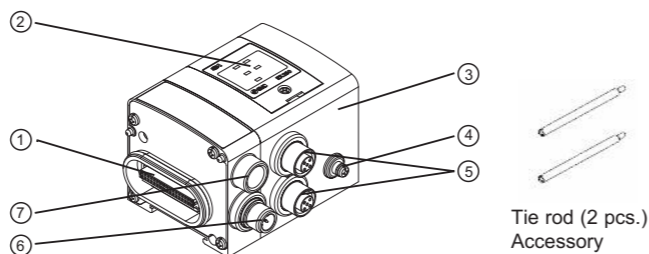
Installation & Maintenance Manual

EtherCAT Compatible SI Unit

Type EX250-SEN1-X156



Names / Functions of Individual Parts

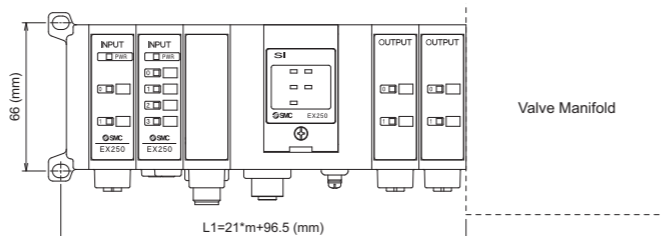


No.	Part names	Application
1	Input block connector	Connects the input block.
2	Display	LED display showing the SI unit status.
3	Output block connector	Connects the output blocks/valves.
4	Ground terminal	Connect to PE.
5	EtherCAT Communications connectors	M12 IN/OUT connectors to connect to the network
6	Power supply connectors	Supplies 24 VDC to the inputs and output
7	Not used	Not used

Installation

Example Installation

m = number of input/output modules



Refer to the catalogue for SV, VQC and S0700 series valves for overall valve manifold dimensions.

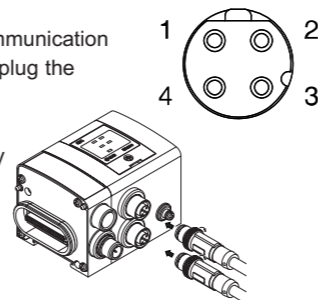
Wiring

① Communication wiring

Connect the EtherCAT Communication Cable(s) to the communication connector(s) of SI Unit. The mating connector cable is Ethernet CAT5 cable with M12 4pin D-code circular connector.

Cable connection

- Aligning the key groove with the communication connector (4-pin, socket) of SI Unit, plug the EtherCAT Communication Cable (plug).
- Tighten the lock nut on cable side by turning it clockwise by hand.
- Confirm that the connector portion does not move.

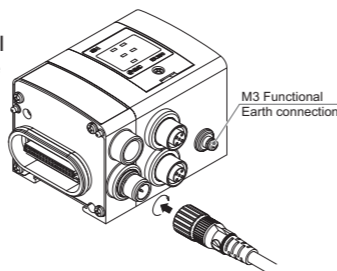


② Power supply wiring

Connect the Power Supply Cable to the power supply connector of SI Unit. The mating connector is M12 5pin A-code circular connector.

Cable connection

- Aligning the key groove with the power supply connector (plug) of SI Unit, plug the Power Supply Cable (socket).
- Tighten the lock nut on cable side by turning it clockwise by hand.
- Confirm that the connector portion does not move.



Wiring (continued)

PinNo.	Cable color: Signal name	Connector Pin layout
1	Brown : 24 VDC +10%/-5% Max. 2A (for solenoid valves/output)	
2	White : 0V (for solenoid valves/output)	
3	Blue : 24VDC ±10% Max. 1.1A(for input and control)	
4	Black : 0V (for input and control)	
5	Grey : Functional Earth (connected at PSU)	

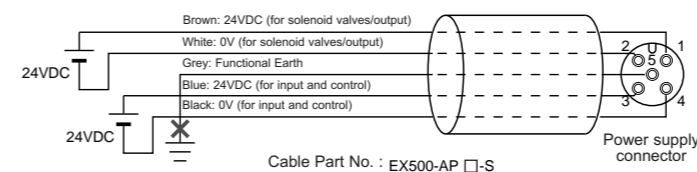
NOTE

Connect the Ground terminal with a ground resistance of 100 ohm or less. There should only be one ground connection within the system to avoid ground loops.

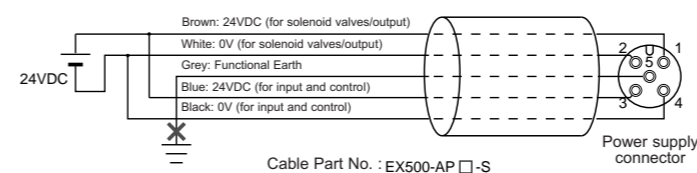
Connecting one or two power supplies to SI Unit.

Either a single power supply or a two power supply system can be adopted, however, the wiring should be made separately (for solenoid valves/output and for input and control) for both systems.

A. Two power supplies

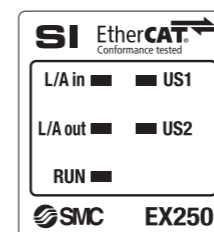


B. Single power supply



Display / Setting

Settings of address or configuration are not required for this unit. The following shows the LED display indications.



Display	Contents	
L/A _{in}	On	Previous EtherCAT client connected
	Off	No connection to the previous EtherCAT client
	Flashing	Communication with the previous EtherCAT client
L/A _{out}	On	Next EtherCAT client connected
	Off	Next EtherCAT client not available
	Flashing	Communication with the next EtherCAT client
Run	Off	Initialisation mode or power is off
	Flashing	Pre-operational mode
	Single flash	Safe-operational mode
US1	On	Operational mode
	Green	Power supply for control and input circuitry is OK
	Red	Power supply for control and input circuitry is out of specification
US2	Green	Power supply for the outputs is OK
	Red	Power supply for outputs is out of specification

Maintenance

How to reset the product after the power has been disconnected

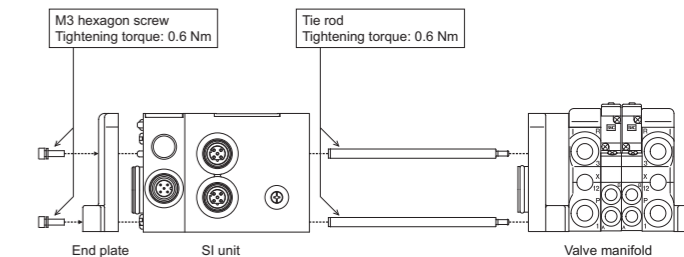
The output condition of the SI unit will not be stored by the product if the power supply is disconnected.

Be sure to confirm safety before operating the product, after the power has been restored.

Maintenance

- Exchange of SI unit
 - Remove hexagonal M3 screw and release the connection to the valve manifold.
 - Replace the SI unit.
 - Tighten the screw using the specified tightening torque. (0.6 Nm)

Assembly and disconnection of unit



Specifications

Basic specifications

Refer to the operation manual for this product for further details of specifications.

Outline dimensions (mm)

SI Unit body

Refer to the operation manual for this product.

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.

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 work.**
Otherwise an injury can be caused.

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.

Contacts

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