



# Technical Specification

SI unit for ControlNet

PRODUCT NAME

EX250-SCN1

Model / Series

**SMC Corporation**

## Table of Contents

Safety Instructions	2
Model No. of product and how to order	6
Contents of package	6
Description and Function of Each Part	6
Mounting/Installation method	8
How to install	8
Wiring and connection	9
Setting/Adjustment	13
Setting of address and HOLD/CLEAR of output	13
ControlNet CONFIGURATION WITH RSLogix 5000™	14
Specification	15
Specification	15
Outline with Dimensions	16
Maintenance procedure	17
Troubleshooting	17
Troubleshooting flow chart	17
Trouble	18

## Safety Instructions

This SI unit and this manual contains essential information to prevent possible injury and damage to (users and other people, and property) and to ensure correct handling.

Please confirm understanding the meaning of the following messages (signs) before reading the remaining the text, and always follow the instructions.

Also carefully read the instruction manual for any relevant equipment or apparatus before use.

### Indications

IMPORTANT MESSAGES	
Read this manual and follow the instructions. Signal words such as WARNING, CAUTION and NOTE, will be followed by important safety information that must be carefully reviewed.	
<b>▲WARNING</b>	Indicates a potentially hazardous situation which could result in death or serious injury if you do not follow instructions.
<b>▲CAUTION</b>	Indicates a potentially hazardous situation which if not avoided, may result in minor injury or moderate injury.
<b>NOTE</b>	Gives you helpful information.

### Operator

- ◆ This manual has been written for those who have knowledge of machinery and apparatuses that use pneumatic equipment and have full knowledge of assembly, operation and maintenance of such equipment.
- ◆ Please carefully read and understand this manual before assembling, operating or performing maintenance on the SI Unit.

### Usage Restrictions

- ◆ This product is designed to be used in general equipment for factory automation. Never use this product with equipment or apparatus that directly concerns human lives\*<sup>1</sup>, or in which a malfunction or failure can cause a great loss.
  - \*1: Equipment or apparatus that directly concerns human lives refers to the following:
    - Medical equipment such as life support systems or equipment used in operating rooms
    - Compulsory equipment required by law such as the Fire Prevention Law, Construction Law and etc.
    - Equipment or apparatus that conforms with those mentioned above.
- ◆ Contact our sales department when plans are made for the product to be used for the system\*<sup>2</sup> including equipment that concerns itself with the safety of persons or that seriously affects the public. Such usage requires special consideration\*<sup>3</sup>.
  - \*2: A system or equipment that concerns itself with the safety of persons or that seriously affects the public refers to the following:
    - Nuclear reactor control systems in a nuclear power plants, safety protection systems or other systems important for safety in nuclear power facility
    - Driving control system for a mass transportation system, and flight control systems
    - Equipment or apparatuses that comes in contact with foods or beverages
  - \*3: Special consideration refer to discussing usage with our engineers to establish a safe system designed as fool-proof, fail-safe, redundant and etc.
- ◆ Special consideration\*<sup>4</sup> should be taken regarding safety or maintainability to prevent a failure or malfunction which can cause a hazard or less. That is likely to occur under certain environmental stress (deterioration).
  - \*4: Special consideration means to fully review the equipment or apparatus in design stage and to establish a back up system in advance, such as a redundant system or fail-safe system.

## **▲WARNING**

1. The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility with the specific pneumatic system must be based on specifications or after analysis and / or tests to meet your specific requirements.

2. Only trained personnel should operate pneumatically operated machinery and equipment.

Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

3. Do not service machinery / equipment or attempt to remove components until safety is confirmed.

- Inspection and maintenance of machinery / equipment should only be performed after confirmation of safe locked-out control positions.

- When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for the equipment and exhaust all residual compressed air in the system.

- Before machinery / equipment is re-started, take measures to prevent quick extensions of the cylinder piston rod etc. (Bleed air into the system gradually to create back-pressure.)

4. Contact SMC if the product is to be used in any of the following conditions:

- Conditions and environments beyond the given specifications, or if product is used outdoors.

Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverage, recreation equipment, emergency stop circuits, press applications, or safety equipment.

- An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

◆ Do not disassemble, modify (including printed circuit board) or repair.  
An injury or failure can result.

◆ Do not operate outside of the specification range.  
Fire, malfunction or SI unit damage can result.  
Please use it after confirming the specification.

◆ Do not use the product in environments with possible presence of flammable, explosive or corrosion gas.  
Otherwise fire, explosion or corrosion can result.  
The product is not designed to be explosion proof.

◆ Do not apply voltage exceeding 250V between a lead wire and a metal fitting.  
• Pay attention to perform an insulation test because it could damage an insulation of the lead wire and accordingly cause failure and generate heat and smoke.

◆ These instructions must be followed when using the production in an interlocking circuit:

- Provide double interlocking through another system such as mechanical protection

- Check the product regularly to ensure proper operation

Otherwise a malfunction can cause an accident.

◆ These instruction must be followed while in 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 it can cause injury.

## **▲CAUTION**

◆ Perform proper functional checks after completing maintenance work.

Stop operation when an abnormality is observed or the product is not working properly.

Safety cannot be secured due to unexpected malfunctions.

## NOTE

- ◆ Follow the instructions given below when handling reduced-wiring system:  
Or it will have a risk of being damaged and operating failure.
- ◆ The instructions on selection (installation, wiring, environment of use, adjustment, operation and maintenance) described below must also be followed.

### \*Product specifications

- The direct-current power supply to combine should be UL authorization power supply.

#### (1) Limited voltage current circuit in accordance with UL508

A circuit which power is supplied by secondary coil of a transformer that meets the following conditions

- Maximum voltage (with no load) : less than 30Vrms (42.4V peak)
- Maximum current : (1) less than 8A(including when short circuited)

#### (2) limited by circuit protector (such as fuse) with the following ratings

No load voltage (V peak)	Max. current rating (A)
0 to 20 [V]	5.0
Above 20 to 30 [V]	100 / peak voltage

(2) A circuit using max. 30Vrms or less (42.4V peak), which power is supplied by Class-2 power supply unit in accordance with UL1310 or UL1585

- Operate reduced-wiring system with the specified voltage.  
Operation with a voltage beyond specifications could cause malfunction or damage of the unit.
- Reserve a space for maintenance  
Be sure to keep a space for maintenance when designing layout of the unit.
- Do not remove nameplate.  
Otherwise maintenance error and misreading of an operation manual could cause damage or malfunction.  
It may also result in nonconformity to safety standards.

### ◆ Precautions on handling

#### \*Installation

- Do not drop, hit or apply excessive shock to the unit.  
Otherwise the unit could be damaged so much as to result in.
- Follow the specified tightening torque.  
Excessive tightening torque can break screws.  
The screw should be tighten with the specified torque, otherwise IP40 protection can not be guaranteed.

#### \*Wiring (including plugging in/out of connector)

- Do not bend the cables or apply excessive force to them by pulling or placing heavy load.  
Wiring subject to bending or tensile stress could cause the cables to break.
- Connect wires and cables correctly.  
Incorrect could wiring break the reduced-wiring system to its extent.
- Do not connect wires while the power is supplied.  
Otherwise it can break the reduced-wiring system or I/O devices could be damaged or malfunction.
- Do not connect power cable or high-voltage cable in the same wiring route as the unit.  
Otherwise the wires to the reduced-wiring system can be interrupted with noise or induced surge voltage from power lines or high-voltage lines and malfunction could be caused.  
Separate wiring of the unit and each I/O device from that of power line and high voltage line.

- Verify the insulation of wiring.

Insulation failure (interference with other circuit, poor insulation between terminals and etc.) could introduce excessive voltage or current to the reduced-wiring system or each I/O device and damage them.

- Separate power line for solenoid valves from power line for input and control unit.

Otherwise wires can be interrupted with noise or induced surge voltage causing malfunction.

- Take proper measurements such as noise filter against noise when the reduced-wiring system is incorporated in equipment or devices.

Otherwise contamination with noise can cause malfunction.

\*Environment

- Select an operation environment according to enclosure. (IP40)

- Take sufficient shielding measures when the unit is installed.

Insufficient measures could cause malfunction or failure.

Verify the effect of the measures after incorporation of the unit in equipment or devices:

(1) A place where noise due to static electricity is generated

(2) A place where electric field strength is high

(3) A place where there is radioactive irradiation

(4) A place near power line

- Do not use the unit near by a place where electric surge is generated.

Internal circuit elements of the reduced-wiring system can deteriorate or break when equipment generating a large surge (electromagnetic lifter, high frequency induction furnace, motor, etc.) is located near the reduced-wiring system. Provide surge preventives, and avoid interference with line for the equipment.

- Use the reduced-wiring system equipped with surge absorber when a surge-generating load such as solenoid valve is driven directly.

Direct drive of a load generating surge voltage can damage reduced wiring system.

- Prevent foreign matter such as remnant of wires from entering the unit.

Take proper measures for the remnant not to enter the reduced-wiring system in order to prevent failure or malfunction.

- Do not expose the reduced-wiring system to vibration and impact.

Otherwise failure or malfunction could be caused.

- Keep the specified ambient temperature range.

Otherwise malfunction could be caused.

Do not use reduced-wiring system in a place where temperature suddenly changes even within the specified range.

- Do not expose the reduced-wiring system to heat radiation from a heat source located nearby.

Malfunction could be caused.

\*Adjustment and Operation

- Use precision screwdriver with for small flat blade for setting Rotary switch.

\*Maintenance

- Perform maintenance and check regularly.

Otherwise an unexpected malfunction of components could of the unit occur due to a malfunction of the whole unit.

- Perform a proper functional check.

Stop operation when an abnormality is observed such that the device doesn't work properly.

Otherwise an unexpected malfunction of the unit component can occur.

- Do not use solvents such as benzene, thinner or other to clean the reduced-wiring system.

They could damage the surface of the body and erase the indication 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.

## Model No. of product and how to order

EX250-S **CN1**

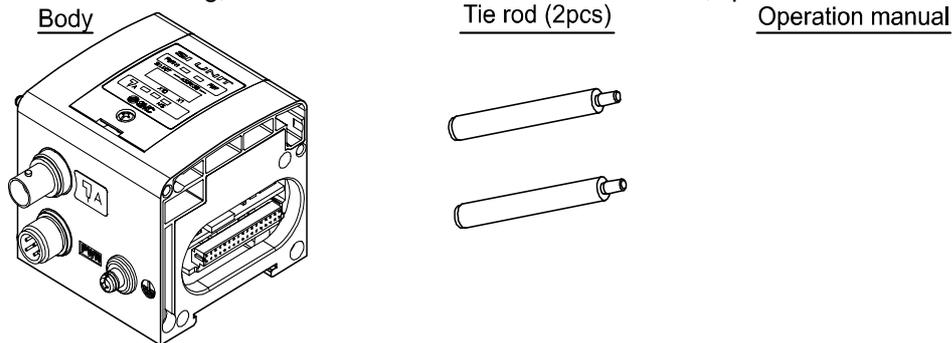
SI unit specification

CN1 Compatible ControlNet, PNP output

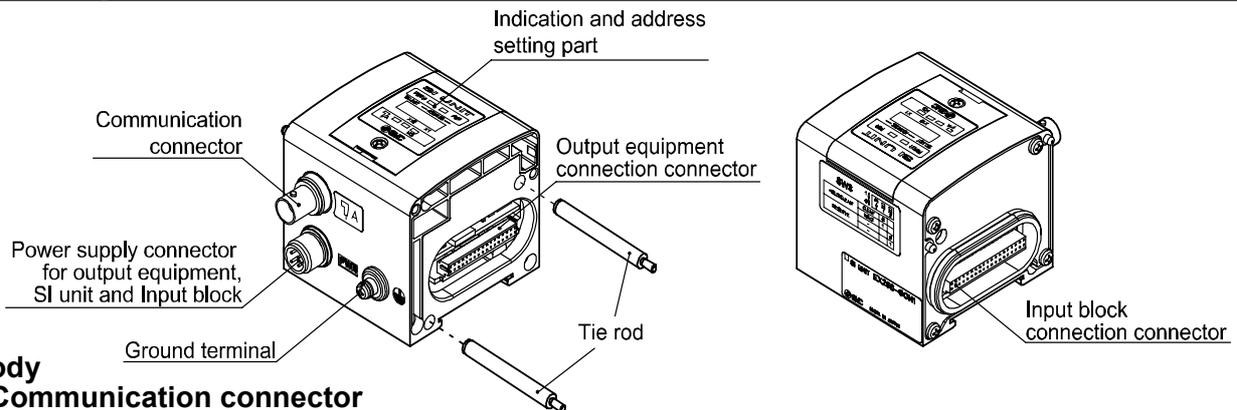
## Contents of package

Make sure that all the components pictured below are included.

If some components are missing, or different from the ordered ones, please contact SMC sales representative.



## Description and Function of Each Part



### Body

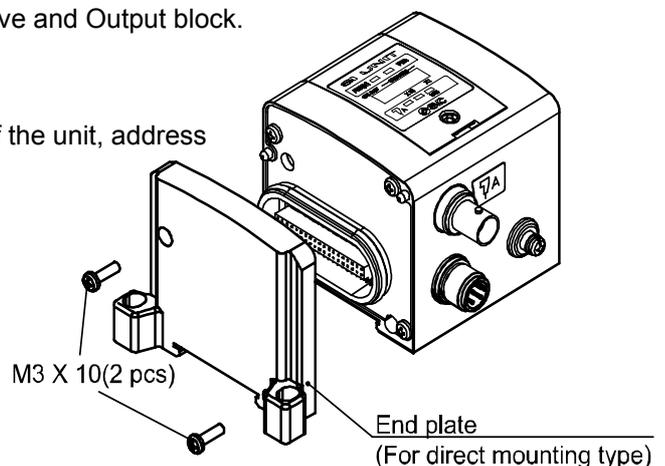
- **Communication connector**  
To connect the communication line.
- **Power supply connector for output equipment, SI unit and Input block**  
To supply power to the output equipment such as a solenoid valve, and Output block, SI unit and Input block.
- **Output equipment connection connector**  
To connect the output equipment such as a solenoid valve and Output block.
- **Input block connection connector**  
To connect the Input block.
- **Indication and address setting part**  
To provide the setting of LED to indicate the condition of the unit, address and hold HOLD/CLEAR.
- **Ground terminal**  
To be connected to the ground.

### Accessory

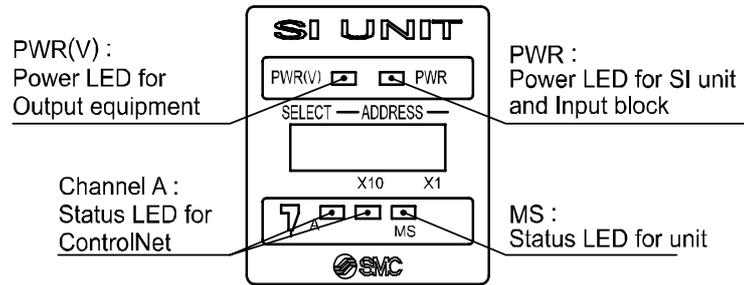
- **Tie rod (2pcs)**  
They are used for assembly and disassembly.
- **Operation manual**

### Option

- **End plate(M3×10(2pcs))**  
For direct mounting type      Part No. : EX250-EA1  
DIN rail mounting type      Part No. : EX250-EA2



## LED indication



LED	Display	Status of LED	Description
PWR(V)	PWR(V)   PWR	Green LED lights up	The power is supplied to the output equipment.
PWR	PWR(V)   PWR	Green LED lights up	The power is supplied to the SI unit and Input block.
MS	A   MS	Green LED lights up	The device is operating normally.
Channel A	A   MS	Green LED lights up	Channel operational.

LED	Display	Status of LED	Description
MS	A   MS	No LED lights up	No power.
	A   MS	Green LED flashes	The device is performing self-diagnosis or a connection with a network is being established.
	A   MS	Red LED flashes	A lights error (recoverable fault) has occurred.
	A   MS	Red LED lights up	A serious error (unrecoverable fault) occurs.
Channel A Viewed together	A   MS	Red LED lights up	Failed Link interface.
	A   MS	Red/Green LED flashes by turn	Channel disabled.
	A   MS	Res /Green LED alternatively light up	Bad node configuration. (Such as duplicate address, etc.)
	A   MS	No LED lights up	No power.
Channel A Viewed independently	A   MS	No LED lights up	Channel disabled.
	A   MS	Green LED flashes	Temporary channel errors.
	A   MS	Red LED flashes	Cable fault, broken cable.
	A   MS	Red/Green LED flashes	Invalid link configuration.

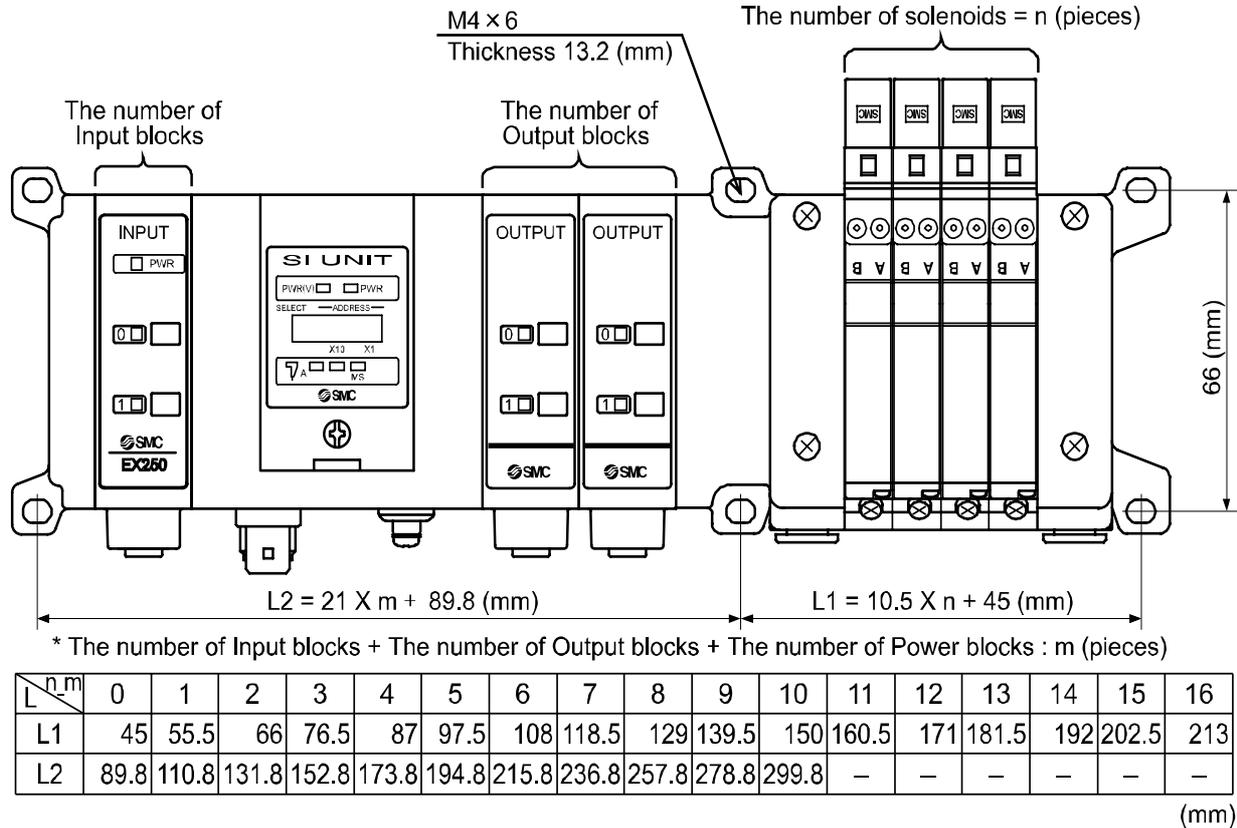
No LED lights up	
Lights up	
Alternating flashing LED's	
LED flashes	

# Mounting/Installation method

## How to install

The SI unit is not designed to be a standalone device. Always use with solenoid valves or Output blocks. In addition, if an Input block is not needed, directly connect an endplate to the SI unit (Part number:EX250-EA1, EX250-EA2).

## Example of installation



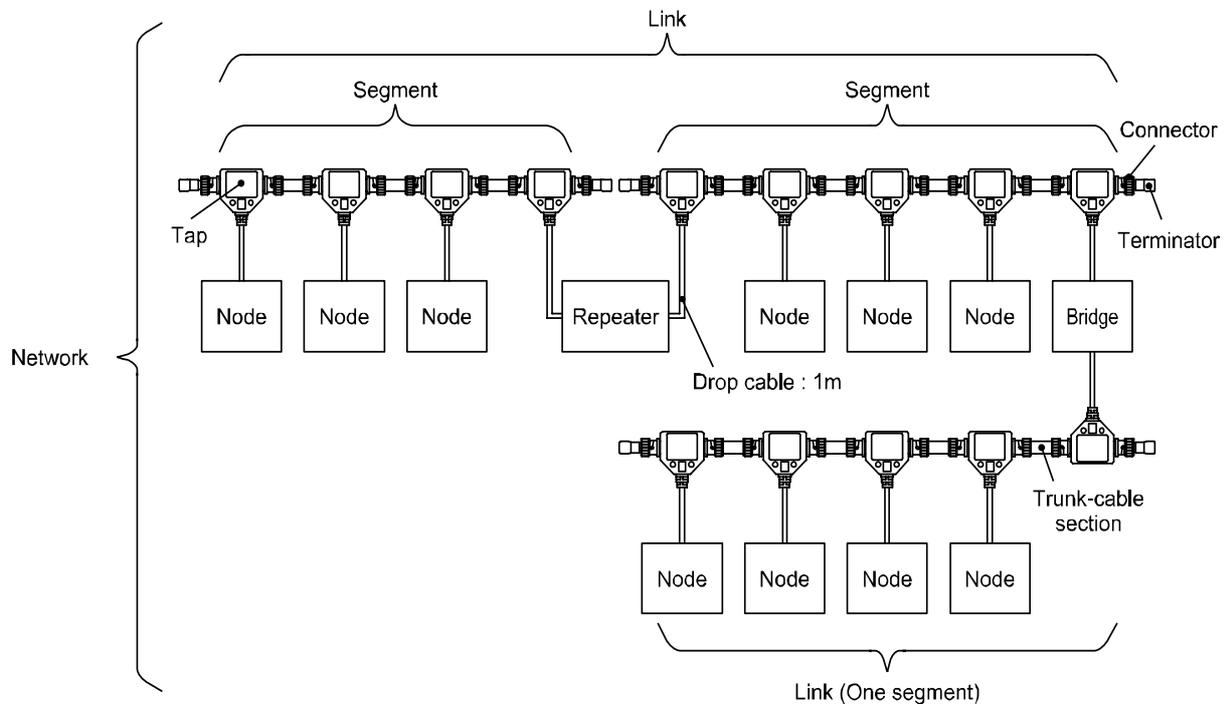
\* The above dimensions show VQC1000 solenoid valve series with EX250 series. Please note that standard dimensions of L2 are up to 10pcs. Please contact sales representatives if the dimensions for 11pcs or more are necessary. See the separate specifications for other solenoid valve and SI unit series.

All wiring (power supply, communication, input and output) and pneumatic piping are connected on one side. Please allow for sufficient room when mounting the unit.

## Wiring and connection

### 1. Connection

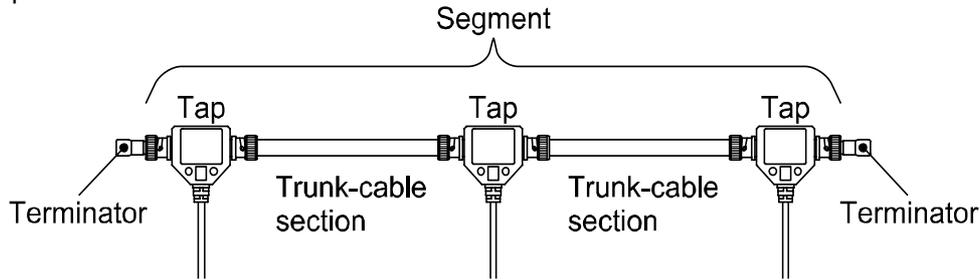
ControlNet network consists of nodes, taps, trunk cables, drop cables and repeaters. Wiring should be arranged in accordance with ControlNet specifications.



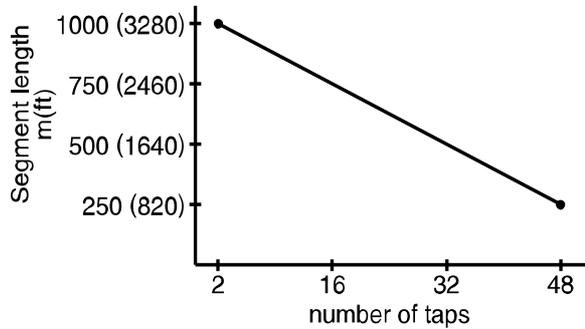
Term	Definition
Network	A collection of connected nodes — the connection paths between any pair of devices may include repeaters and bridges.
Link	A collection of nodes with unique addresses in the range of 1 to 99.
Segment	Trunk-cable sections connected via taps with terminators at each end and with no repeaters.
Trunk cable	The bus or central part of a cable system.
Trunk-cable section	A length of a cable between any two taps.
Repeater	A two-port active physical layer component that reconstructs and retransmits all traffic it receives on one segment side to another segment side.
Tap	The connection between any device and the ControlNet cable system.
Bridge	A device that allows traffic to pass from one link to another link.
Node	Any physical device connecting to the ControlNet cable system which requires a network address in order to function on the network — a link may contain a maximum of 99 nodes. This address must be in the range of 1-99 and be unique to that link.
Terminator	A 75Ω resistor mounted in a BNC plug.

### Total cable length for segment

A segment is comprised of several sections of trunk cable separated by taps. The total cable length of a segment is equal to the sum of all of the trunk-cable sections.



The total allowable length of a segment depends upon the number of taps in your segment. There is no minimum trunk-cable section length requirement. The maximum allowable total length of a segment is 1,000m (3,280ft.) with two taps connected. Each additional tap decreases the maximum length of the segment by 16.3m (53ft.). The maximum number of taps allowed on a segment is 48 with a maximum length of 250m (820ft.).



Allowable maximum length of segment = 1000m (3280feet) - 16.3m (53.4 feet) x [number of tap - 2]

#### Example

If your segment requires 10 taps, the maximum segment length is :

$$1000\text{m (3280ft.)} - 16.3\text{m (53.4ft.)} \times [10 - 2]$$

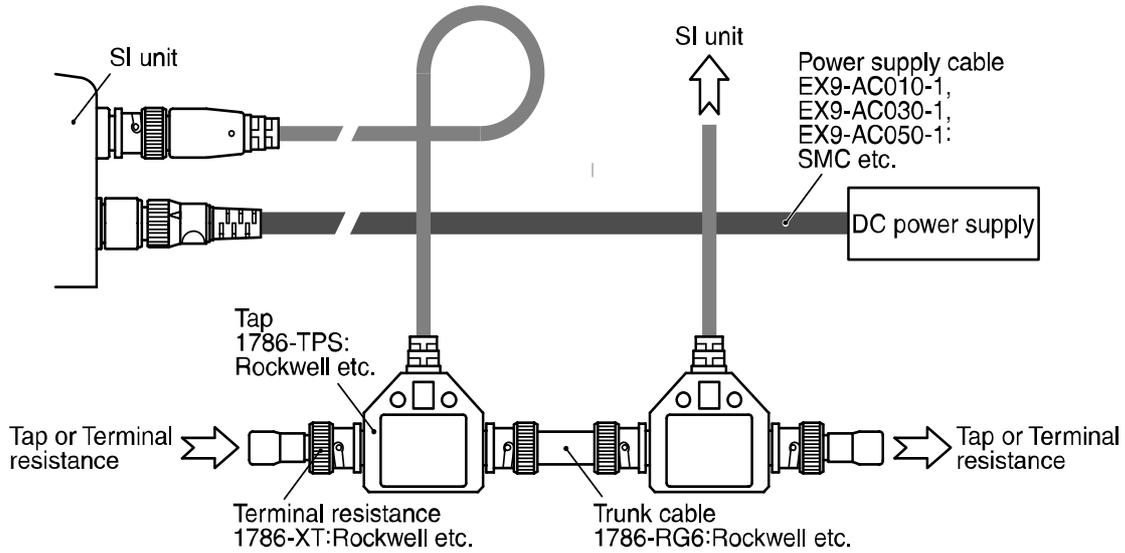
$$1000\text{m (3280ft.)} - 130.4\text{m (427.7ft.)}$$

$$= 869.6\text{m (2852.3ft.)}$$

Since the total length of trunk cables or the number of taps may increase if a repeater is installed in a segment, create one more segment in that case.

\* Wiring should be arranged in accordance with Control specifications.

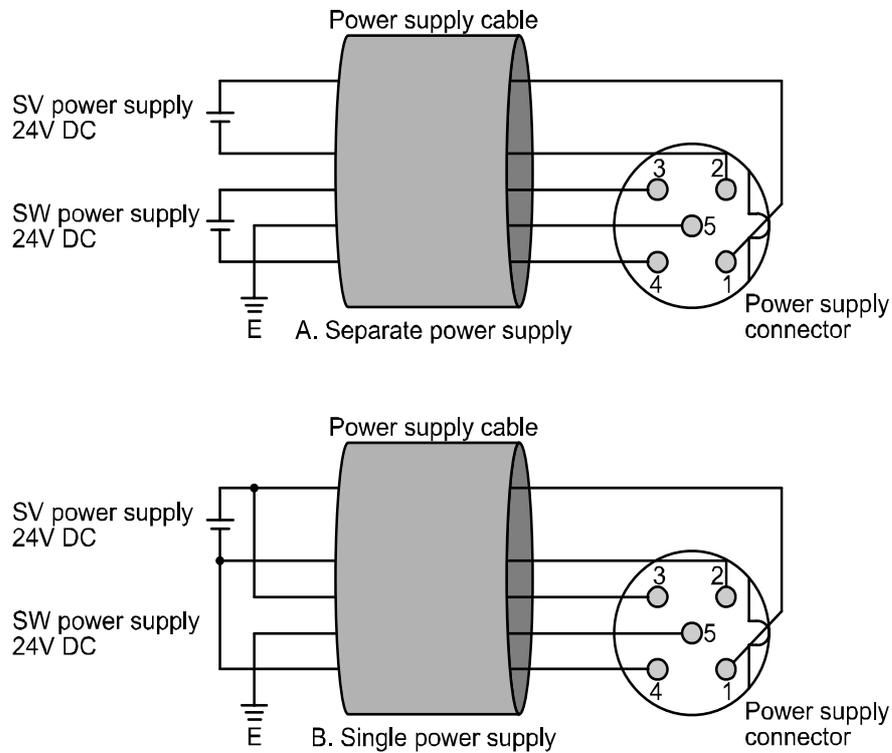
## 2. Connection example



\* SMC only provides the SI unit and the power cable. Please refer to other manufacturers for additional parts needed.

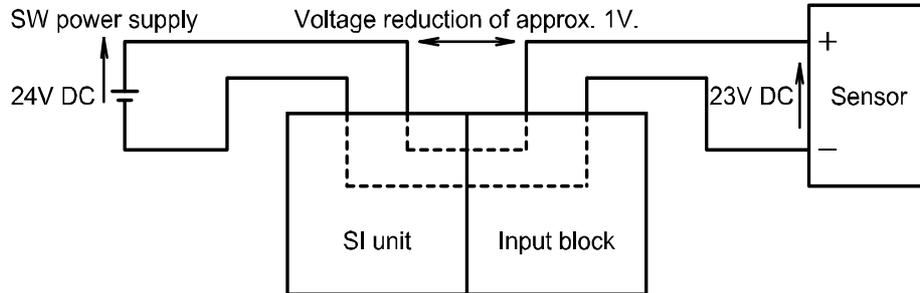
## 3. Power supply wiring

The power supply connector features two independent electrical circuits, one for the output devices and one for the SI unit / Input blocks. Both, a single or two individual power supplies can be used. See schematic below.

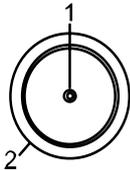


\* In case of single power supply, apply power supply voltage within a specified value.

SW power supply is applied to the sensor connected to the Input block. Since a maximum of approx. 1V voltage may drop in the unit, select a sensor considering the voltage drop. If 24V needs to be supplied by any means, SW power supply voltage should slightly be increased in order to maintain the sensor voltage at 24V with the actual load applied (allowable voltage of SW power supply ranges from 19.2 to 28.8V).

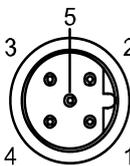


Communication connector : BNC Jack Connector



No.	Description	Function
1	Signal+	Positive side of communication signal
2	Signal-	Negative side of communication signal

Power connector : M12 Male 5 poles reverse key



No.	Description	Function
1	SV24V	Positive side of power supply for output equipment
2	SV0V	Negative side of power supply for output equipment
3	SW24V	Positive side of power supply for SI unit and Input block
4	SW0V	Negative side of power supply for SI unit and Input block
5	E	Ground

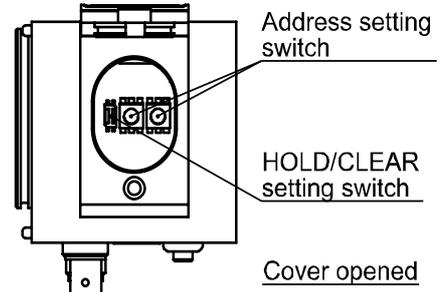
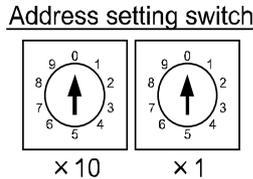
# Setting/Adjustment

## Setting of address and HOLD/CLEAR of output

The setting for the address and HOLD/CLEAR of output can be performed with 2 rotary switches and 1 DIP switch located under the cover.

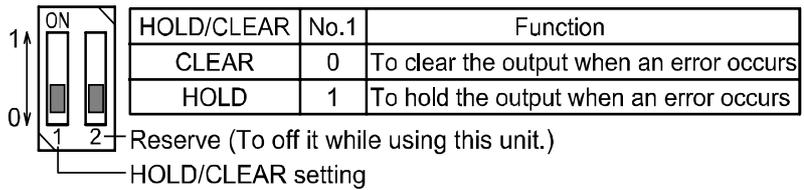
### Address setting

Each address is assigned to the unit with an address setting switch. The address is set using two rotary decimal switches. The setting range is from 1 to 99 (decimal). At the time of shipment from the factory, the address is set to "00" as shown in the above figure.



### HOLD/CLEAR setting

The HOLD/CLEAR of output setting is performed with the HOLD/CLEAR setting switch. The setting value is obtained from the following table.



At the time of shipment from the factory, the default setting is "0", which means "CLEAR" is selected.

\*Be sure to turn off the power supply when any setting is performed in the SI unit.

### I/O mapping

I/O memory map of SI unit is stated as below.

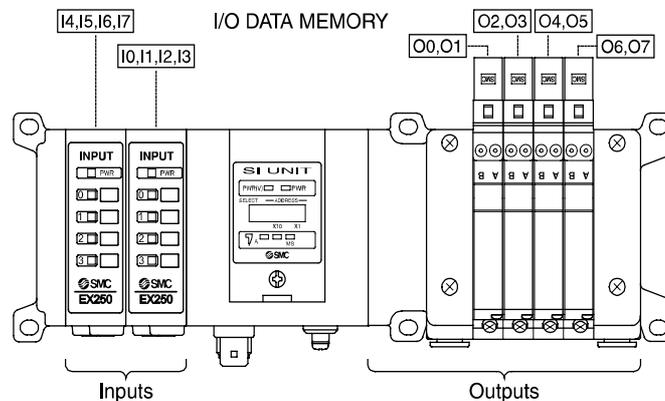
(n=0)	Input Data															
	MSB							LSB								
Word(n)	I15	I14	I13	I12	I11	I10	I9	I8	I7	I6	I5	I4	I3	I2	I1	I0
Word(n+1)	I31	I30	I29	I28	I27	I26	I25	I24	I23	I22	I21	I20	I19	I18	I17	I16
Word(n+2)	Reserve				DI_CHK	DO_CHK	Reserve									

(n=0)	Output Data															
	MSB								LSB							
Word(n)	O15	O14	O13	O12	O11	O10	O9	O8	O7	O6	O5	O4	O3	O2	O1	O0
Word(n+1)	O31	O30	O29	O28	O27	O26	O25	O24	O23	O22	O21	O20	O19	O18	O17	O16

\* In general, the SI unit possesses 6byte for input and 4byte for output, and can monitor the following status.

DI\_CHK: Over current status from Input block. (When over current is detected, to be "0" state. Usually it is "1".)

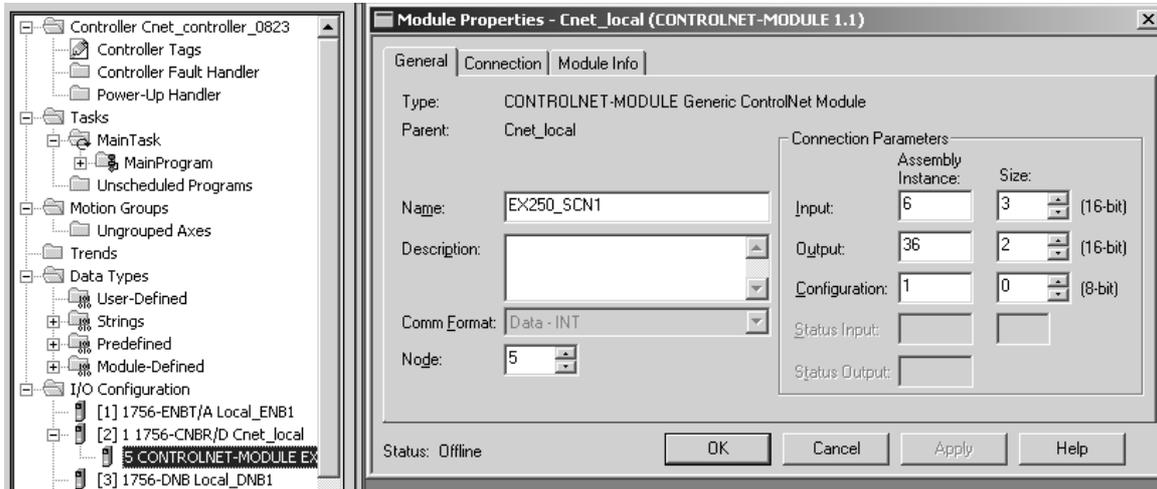
DO\_CHK: Solenoid valve power status. (When power is down (around 19V or less), to be "0" state. Usually, it is "1".)



## ControlNet CONFIGURATION WITH RSLogix5000™

When setting up the node with RSLogix5000, specific values must be entered for the assembly instance with regards to Input, Output and Configuration.

Please see the diagram below for a Rockwell Automation's RSLogix5000 programming software example.



### Connection Parameter

Assembly Instance values:

Description	Decimal (Hex)
Input	6 (6h)
Output	36 (24h)
Configuration	1 (1h)

Size:

Description	Size
Input	3 words
Output	2 words
Configuration	0 word

Comm Format:

Description	Data
Comm Format	"Data - INT"

# Specification

## Specification

### General specification

Item	Specification
Operating ambient temp.	+5 to +45°C
Storage ambient humidity	35 to 85%RH (No condensation)
Storage ambient temp.	-20 to 60°C
Vibration proof	10 to 57Hz 0.35mm (Constant amplitude) 57 to 150Hz 50m/s <sup>2</sup> (Constant acceleration)
Impact proof	150m/s <sup>2</sup> (peak), 11ms x three times in each direction +/- X, Y and Z.
Withstand voltage	500VAC for 1min. Between body and external terminals.
Insulation resistance	500VDC 10M ohm or more. Between body and external terminals.
Operating environment	No corrosive gas
Weight	250g or less
Enclosure	IP40

### Network specification

Item	Specification
Applicable system	ControlNet Version 2.0 Errata 3 adapter class
Address setting range	1 to 99 (Setting by rotary switch)
Communication speed	5Mbps fixed
Network update time (NUT)	Min. 2ms applicable
Device Type	7 (General Purpose Discrete I/O)
Product code	2501
Revision	Refer to EDS file
Vendor ID	7
Consumed I/O connection size	4 bytes
Produced I/O connection size	6 bytes
Support Message	Cyclic I/O Message, CIP Message
Redundancy media	Not provided

### Electrical specification

Item		Specification
Power supply voltage	Power supply for SI unit/Input block	24VDC ±20%
	Power supply for output equipment	24VDC <sup>+10%</sup> <sub>-5%</sub>
Current consumption		100mA Max. *1
Input spec.	Input point	32 points
	Input type	TTL
	Connected input equipment	Input block *3
	Input block supply voltage	24VDC ±20%
	Block supply current	Total 1A Max.
Output spec.	Output points	32 points
	Output type	N-ch MOS-FET High side switch (PNP output)
	Connected output equipment	Solenoid valve (24VDC, 1.5W or less, With light surge suppressor), Output block
	Output block supply voltage	24VDC ±10%
	Residual voltage	0.3V or less
	Load current consumption *2	Total 2A Max.

\*1: Current consumption by SI unit internal power supply.

\*2: Maximum load current supplied by output equipment power supply.

\*3: See the following table for the applicable blocks.

### Input/Output block

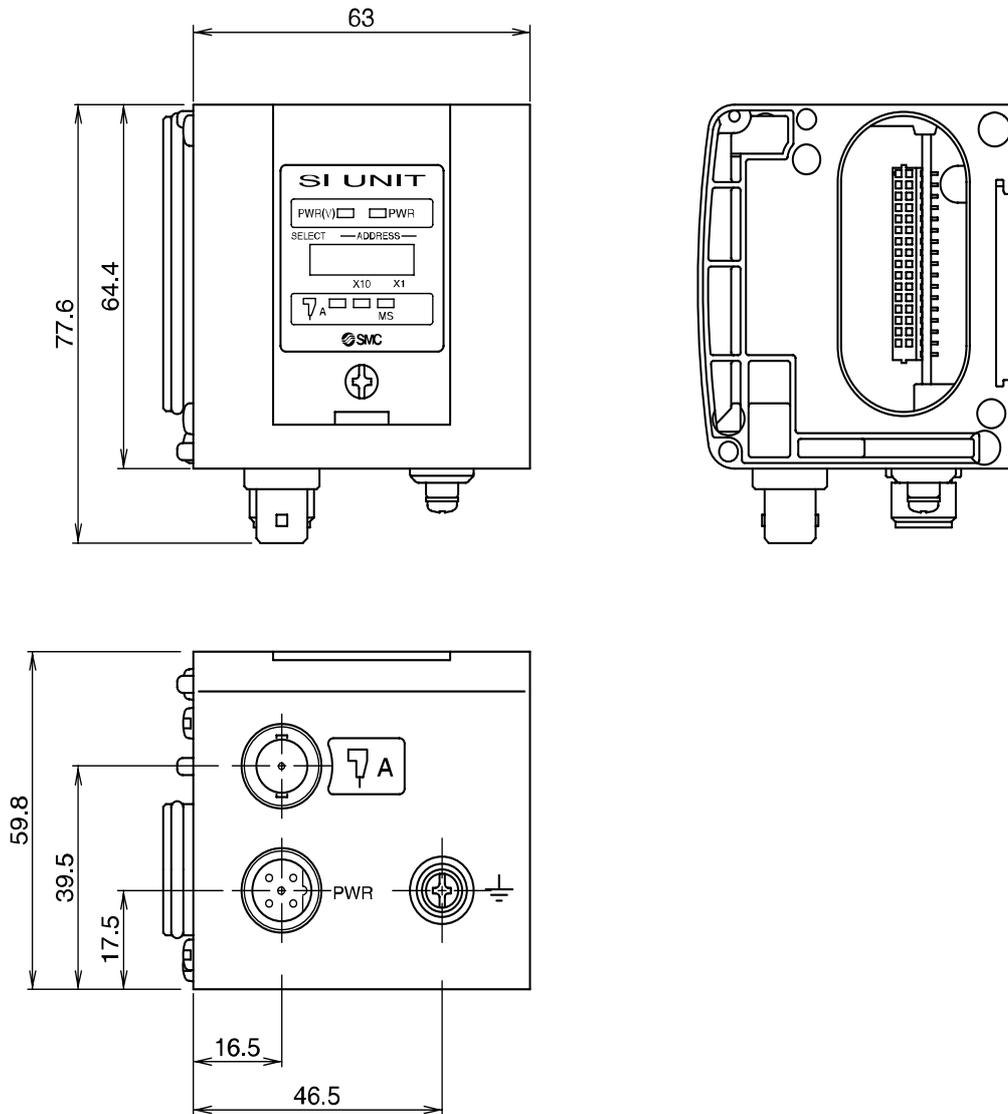
Part No.	Remark
Input component EX250-IE1	M12 connector, 2-input
Input component EX250-IE2	M12 connector, 4-input
Input component EX250-IE3	M8 connector, 4-input
Output component EX9-OET1	M12 connector, PNP output (-COM), For low watt
Output component EX9-OEP1	M12 connector, PNP output (-COM), For high watt
Output component EX9-PE1	M12 connector, Power block

### Applicable solenoid valve series

Valve series	Type
VQC	VQC1000 <sup>*1</sup> , VQC2000 <sup>*1</sup> , VQC4000
SV	SV1000, SV2000, SV3000

\*1 : Negative common valve only

### Outline with Dimensions



## Maintenance procedure

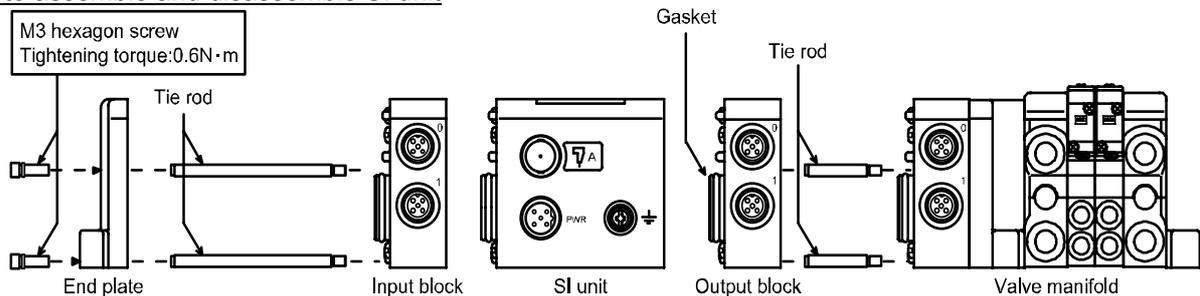
### How to replace SI unit

- Remove screws mounted on the endplate, and separate it from the valve unit.
- Replace the SI unit (Tie rods should not be removed).  
Mount the removed endplate, and tighten it with the same screws with a specified tightening torque. (0.6N·m)

### ⚠Precautions on maintenance

- (1) Be sure to check that all the power supply is turned off.
- (2) Foreign substances shall not be intruded in the unit.
- (3) Foreign substances or scratches shall not be present on the gasket.
- (4) Screws shall be tightened with a specified tightening torque.  
If they are not set properly, it will lead to board failure, or liquid and or dust might be intruded in the unit.

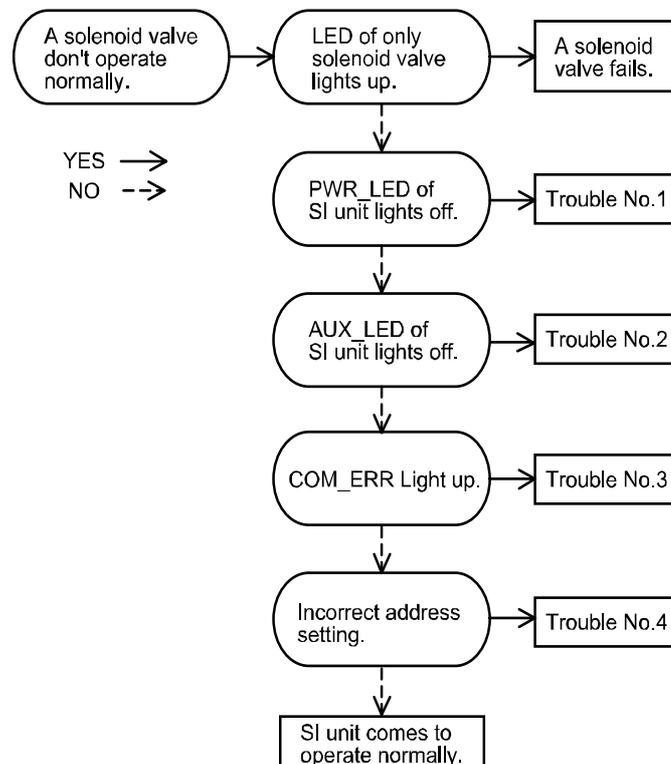
### How to assemble and disassemble SI unit



## Troubleshooting

### Troubleshooting flow chart

If a SI unit malfunctions, select the specific trouble with the flow chart stated below.



## Trouble

### Trouble No.1

Trouble	Possible cause	Investigation method of cause	Remedy
RWR lights off	Wrong wiring of power supply for communication	Check that wiring of power supply for communication and connector are not loosened.	Connect them properly.
	Failure of power supply for communication	Check the status of power supply for communication.	Apply DC26.5 to 31.6V of power supply voltage for communication.

### Trouble No.2

Trouble	Possible cause	Investigation method of cause	Remedy
AUX lights off	Failure of power supply for output	Check the status of power supply for output	Apply DC24V+10%/-5% of power supply voltage for output.

### Trouble No.3

Trouble	Possible cause	Investigation method of cause	Remedy
COM-ERR lights up	Communication error	<ul style="list-style-type: none"><li>• Check components that generate noise in the peripheral of communication line, and if high voltage lines exist.</li><li>• Check communication line between PLC and SI unit is properly connected.</li></ul>	<ul style="list-style-type: none"><li>- Keep the communication line away from the noise source.</li><li>- Master setting</li><li>- Properly set the master unit.</li></ul>

### Trouble No.4

Trouble	Possible cause	Investigation method of cause	Remedy
RWR and AUX light up and COM-ERR lights off	Address setting error	Check address setting.	Set the proper address.

Revision history

## SMC Corporation

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

### Phone

AUSTRIA / (43) 2262-62 280

BELGIUM / (32) 3-355 1464

CZECH REP. / (420) 5-414 24611

DENMARK / (45) 70 25 29 00

FINLAND / (358) 9-859 580

FRANCE / (33) 1-64 76 1000

GERMANY / (49) 6103 4020

GREECE / (30) 1- 342 6076

HUNGARY / (36) 1-371 1343

IRELAND / (353) 1-403 9000

ITALY / (39) 02-92711

NETHERLANDS / (31) 20-531 8888

NORWAY / (47) 67 12 90 20

POLAND / (48) 22-548 50 85

PORTUGAL / (351) 2 610 89 22

SPAIN / (34) 945-18 4100

SWEDEN / (46) 8-603 0700

SWITZERLAND / (41) 52-396 3131

TURKEY / (90) 212 221 1512

UNITED KINGDOM / (44) 1908-56 3888

Note: Please acknowledge that this content might change without a previous notice beforehand.

Each company might be using the name of the commodity of this manual publishing respectively as a trademark.

© 2004 SMC Corporation All Rights Reserved



No. EX##-OMJ0001