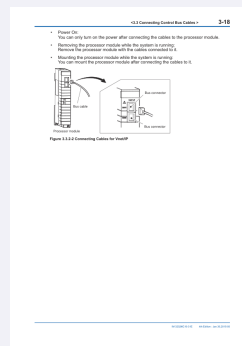


FIELD INSTALLATION QUICK GUIDE

Installation Instructions

SCP451-11 S1

Safety control processor module



PRODUCT	SCP451-11 S1
FAMILY	ProSafe-RS
FUNCTION	Safety control processor module
SOURCE	Yokogawa IM 32Q06C10-31E, processor module and maintenance sections

01 OFFICIAL MOUNTING AND WIRING

- Identify the exact processor suffix, style, station and redundant configuration before replacement.
- Save the approved application and station records; follow the separate non-redundant or dual-redundant replacement procedure.
- Connect Bus 1 and Bus 2 to their assigned Vnet/IP paths according to the manufacturer drawing.
- Restore the documented configuration and confirm processor readiness, control state and network operation.

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3.3.2 Connecting Cables for Vnet/IP

The section explains how to connect the cables for Vnet/IP.



IMPORTANT

When you connect the cables for Vnet/IP to the processor modules of the safety control unit, note the following:

- For each safety control unit, connect "Layer 2 switch for Bus 1 to the BUS 1 connector of the processor module" and connect "Layer 2 switch for Bus 2 to the BUS 2 connector of the processor module."
- Before connecting the cable, remove the processor module from the safety control unit.

■ Cable Wiring for Vnet/IP

The following figure shows the wiring of Vnet/IP for connecting a safety engineering PC and a safety control unit.

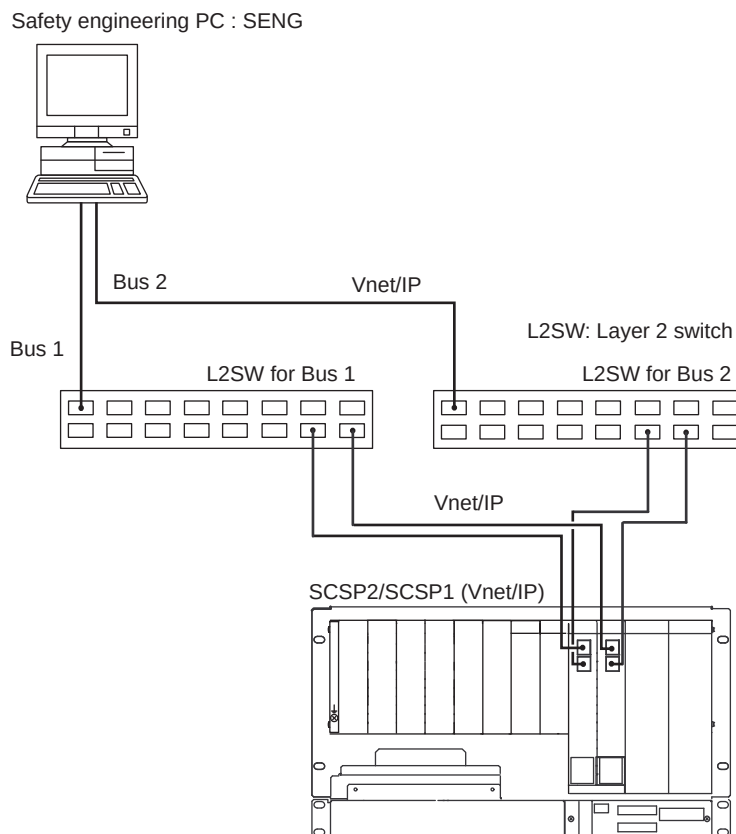


Figure 3.3.2-1 Connecting Cables for Vnet/IP

● Connecting Cables for Vnet/IP

The cables for Vnet/IP are connected to the processor modules of the safety control unit. There are two types of processor modules:

- SCP461 (SSC60S/SSC60D)
- SCP451 (SSC50S/SSC50D)

When connecting Vnet/IP cables:

- **Power On:**
You can only turn on the power after connecting the cables to the processor module.
- **Removing the processor module while the system is running:**
Remove the processor module with the cables connected to it.
- **Mounting the processor module while the system is running:**
You can mount the processor module after connecting the cables to it.

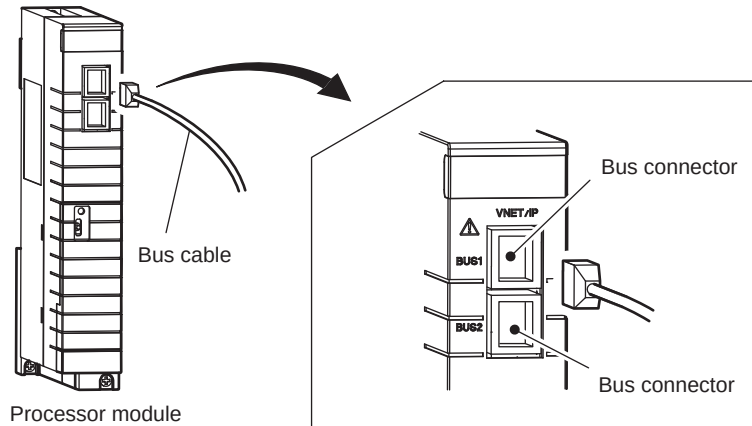


Figure 3.3.2-2 Connecting Cables for Vnet/IP

● SCP461

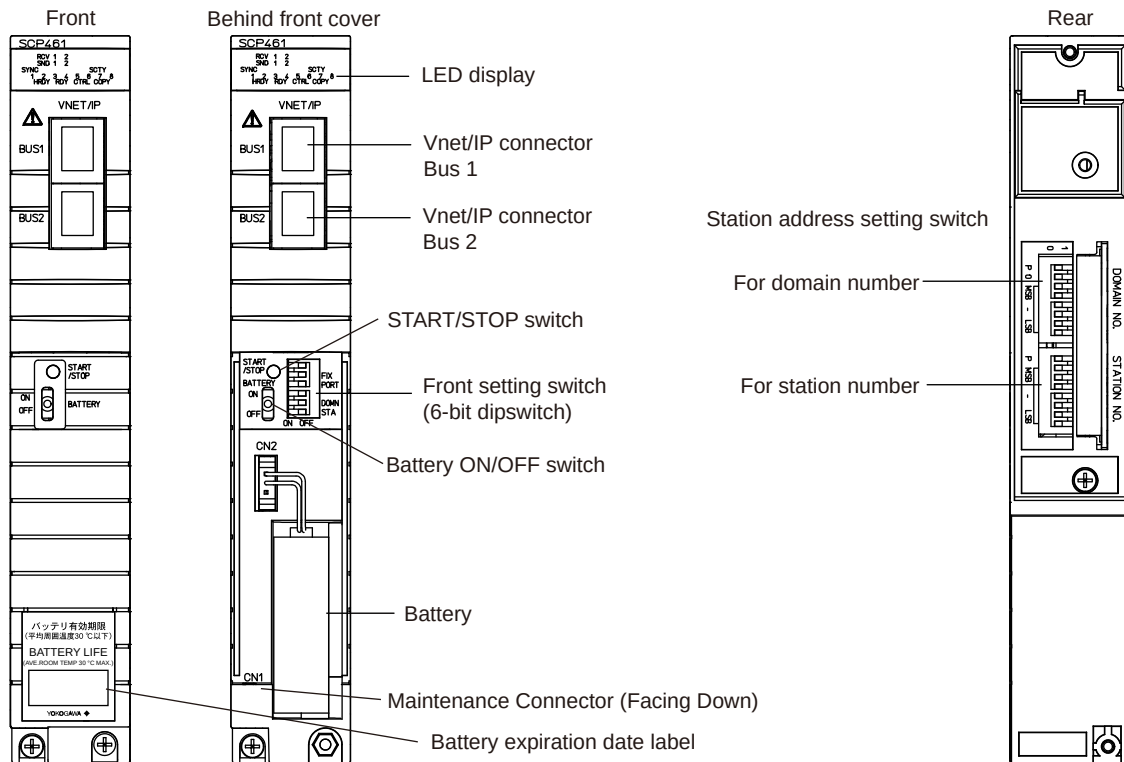


Figure 4.2-2 SCP461 Overview

● SCP451

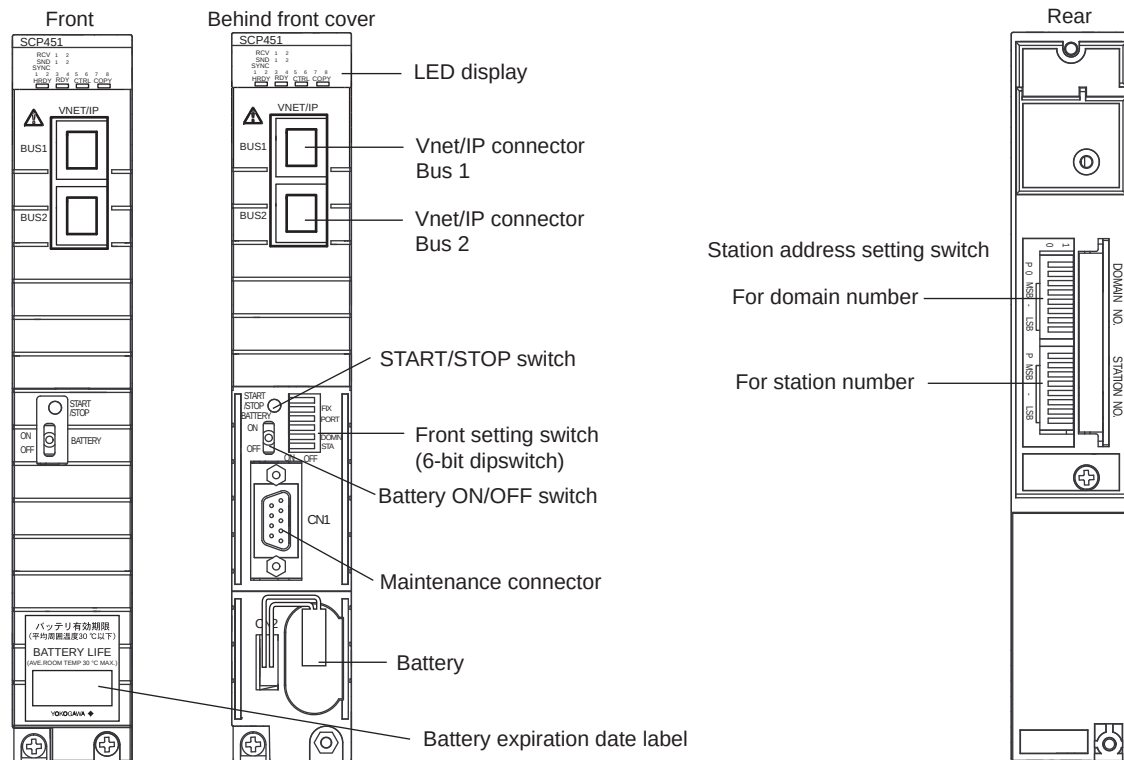


Figure 4.2-3 SCP451 Overview

7.2.3 Replacing Processor Module

Processor module is to be replaced according to the following procedure.



IMPORTANT

When replacing a non-redundantly configured processor module, take care of the following cautions:

- The memory of processor module to be replaced should be cleared (by switching off the battery).
- After installing the processor module, the master database offline download needs to be performed from the SCS Manager of SENG.

SEE ALSO

For more information about the indication LEDs on front of processor module, refer to:

[4.2, "Processor Module" on page 4-3](#)

For more information about disconnecting the cables for Vnet/IP, refer to:

[3.3.2, "Connecting Cables for Vnet/IP" on page 3-17](#)

For more information about master database offline download, refer to:

[9.3, "Master Database Offline Download" in Engineering Reference \(IM 32Q04B10-31E\)](#)

■ SCP401

● Procedure for Removing Processor Module

1. Make sure that the CTRL LED on the processor module to be removed is OFF (indicates that the module is in standby state). If the LED is ON, push the START/STOP switch to make it OFF.
2. Disconnect the V net coupler cable at the front side of the processor module. And promptly remove the other V net coupler cable.
3. Loosen the screws that fix the processor module.
4. Pull out the processor module straight.

● Installation Procedure

1. Check the processor module to be installed has the same domain number and the station number as the replaced module.
2. Make sure that the BATTERY ON/OFF switch is at the OFF position.
3. Install the processor module into the base unit.
Make sure that the processor module is firmly inserted into the slot at the backboard.
4. Fasten the screws that fix the processor module.
5. Connect the V net coupler cable at the front side of the processor module. And promptly connect the other V net coupler cable.
6. Put the BATTERY ON/OFF switch to ON position.
7. Check the front lamps or the SCS state management window to make sure that the processor module is normal.
Check the diagnostic information window on the SENG for any errors.

- If the processor modules are dual-redundantly configured, the program is copied automatically. The processor becomes standby status after copying.
- If the processor module is not redundantly configured, you need to perform master database offline download.

**SEE
ALSO**

For more information about procedure for exchanging single processor module, refer to:

[7.2.2, "Maintenance for ProSafe-RS Equipment" in Engineering Guide \(IM 32Q01C10-31E\)](#)

■ SCP461/SCP451

● Procedure for Removing Processor Module



IMPORTANT

When you remove the processor module while the system is running, you should not disconnect the cables for Vnet/IP from the processor module.

1. Make sure that the CTRL LED on the processor module to be removed is OFF (indicates that the module is in standby state). If the LED is ON, push the START/STOP switch to make it OFF.
2. Loosen the screws that fix the processor module.
3. Without disconnecting the cables for Vnet/IP, remove the processor module by pulling it toward you.
4. Disconnect the cables for BUS1 and BUS2 from the front of the processor module. For replacement of the processor module, there is no need to disconnect the cables from the Layer2 Switch.

● Overview of Installation Procedures



IMPORTANT

- When you install the processor module to the base unit while the system is running, you should connect the cables for Vnet/IP to the processor module first.
- For ProSafe-RS systems not integrated with the CENTUM system, before you install the processor module to the base unit, you need to erase all internal settings in the processor module in accordance with the procedure for erasing the processor module internal settings.
When integrated with CENTUM system, the procedure for erasing the processor module internal settings is not needed.

**SEE
ALSO**

For more information about procedure to erase internal settings in the processor module, refer to:

“● Procedure to Erase Processor Module Internal Settings” on page 7-12

● Installation Procedure

1. Make sure that the DIP switches for the domain and station numbers as well as the front DIP switches for negotiation set on the processor module to be installed are the same as on the module to be replaced.

2. Make sure that the BATTERY ON/OFF switch is at the OFF position.
3. Connect the cables to both ports of BUS1 and BUS2. There is no need to turn off the power of the Layer2 Switch.
4. Install the processor module into the base unit. Make sure that the processor module is firmly inserted into the slot at the backboard.
5. Fasten the screws that fix the processor module.
6. Put the BATTERY ON/OFF switch to ON position.
7. Check the front lamps or the SCS state management window to make sure that the processor module is normal.
Check the diagnostic information window on the SENG for any errors.
 - If the processor modules are dual-redundantly configured, the program is copied automatically. The processor becomes standby status after copying.
 - If the processor module is not redundantly configured, you need to perform master database offline download.

● Procedure to Erase Processor Module Internal Settings

For the ProSafe-RS system that is not integrated with CENTUM system, erase the processor module internal settings in accordance with the following procedure.

1. Set the DIP switches (SW1) for the domain number on the processor module as follows:

Table 7.2.3-1 Setting of DIP Switches for Domain Number Setting (SW1)

Bit 1	Parity	1
Bit 2		1
Bit 3	MSB	0
Bit 4		0
Bit 5		0
Bit 6		0
Bit 7		0
Bit 8	LSB	1

2. Set the DIP switches (SW2) for the station number on the processor module as follows:

Table 7.2.3-2 Setting of DIP Switches for Station Number Setting (SW2)

Bit 1	Parity	0
Bit 2	MSB	0
Bit 3		0
Bit 4		0
Bit 5		0
Bit 6		0
Bit 7		0
Bit 8	LSB	1

3. Check that the front DIP switches on the processor module are all set to the OFF position:

Table 7.2.3-3 Setting of DIP Switches for Action Mode Setting (SW4)

Bit 6		OFF
Bit 5	FIX	OFF
Bit 4	PORT	OFF
Bit 3		OFF
Bit 2	DOMN	OFF
Bit 1	STA	OFF

- Without connecting the cables for BUS1 and BUS2, install the processor module to the base unit.
- Push the START/STOP switch on the processor module to stop the module, and make sure that the HRDY LED is OFF.
- Keep the processor module at this status for about a minute.
- Remove the processor module from the base unit.

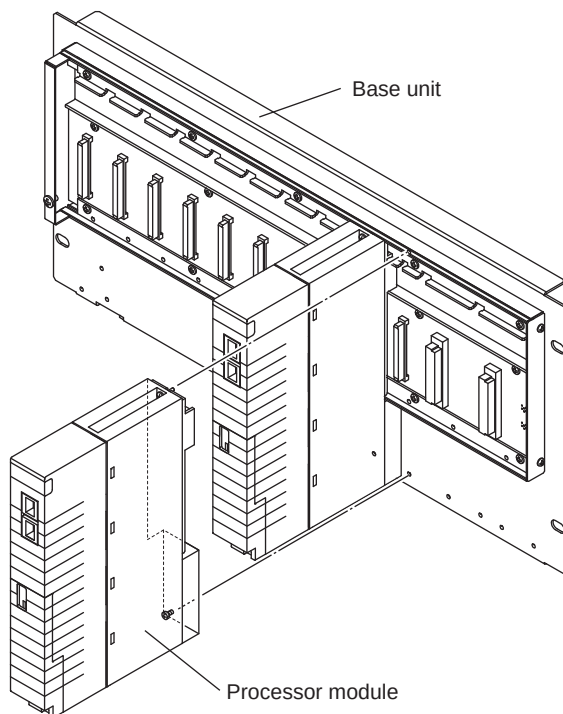


Figure 7.2.3-1 Replacing the Processor Module

SEE ALSO For more information about DIP switches, refer to:

- “● SCP461” on page 4-4
- “● SCP451” on page 4-4