

**ProSafe-*RS* Release Infor-
mation**

IM 32Q01A50-31E

vigilantplant.[®]

Introduction

This brochure is the release note that comes with the ProSafe-RS electronic documents. It provides supplementary information not included in the ProSafe-RS electronic documents. The structure of this document is shown below.

Chapter 1 : Usage Notes for Revision R3.02.20

This chapter explains the points to be noted when applying revision R3.02.20.

Safety Precautions for Use

■ Safety, Protection, and Modification of the Product

- To protect the system controlled by the Product and the Product itself and to ensure safe operation, please observe the safety precautions described in this Manual. Yokogawa Electric Corporation ("YOKOGAWA") assumes no liability for safety if users fail to observe the safety precautions and instructions when operating the Product.
- If the Product is used in a manner not specified in the User's Manuals, the protection provided by the Product may be impaired.
- If any protection or safety circuit is required for the system controlled by the Product or for the Product itself, please install it externally.
- Use only spare parts that are approved by YOKOGAWA when replacing parts or consumables of the Product.
- Do not use the Product and its accessories such as power cords on devices that are not approved by YOKOGAWA. Do not use the Product and its accessories for any purpose other than those intended by YOKOGAWA.
- Modification of the Product is strictly prohibited.
- The following symbols are used in the Product and User's Manuals to indicate the accompanying safety precautions:



Indicates that caution is required for operation. This symbol is labeled on the Product to refer the user to the User's Manuals for necessary actions or behaviors in order to protect the operator and the equipment against dangers such as electric shock. In the User's Manuals, you will find the precautions necessary to prevent physical injury or death, which may be caused by accidents, such as electric shock resulting from operational mistakes.



Identifies a protective conductor terminal. Before using the Product, you must ground the protective conductor terminal to avoid electric shock.



Identifies a functional grounding terminal. A terminal marked "FG" also has the same function. This terminal is used for grounding other than protective grounding. Before using the Product, you must ground this terminal.



Indicates an AC supply.



Indicates a DC supply.



Indicates the ON position of a power on/off switch.



Indicates the OFF position of a power on/off switch.

■ Notes on Handling User's Manuals

- Hand over the User's Manuals to your end users so that they can keep the User's Manuals on hand for convenient reference.
- Thoroughly read and understand the information in the User's Manuals before using the Product.
- For the avoidance of doubt, the purpose of the User's Manuals is not to warrant that the Product is suitable for any particular purpose but to describe the functional details of the Product.
- Contents of the User's Manuals are subject to change without notice.

- Every effort has been made to ensure the accuracy of contents in the User's Manuals. However, should you have any questions or find any errors, contact us or your local distributor. The User's Manuals with unordered or missing pages will be replaced.

■ Warning and Disclaimer

- Except as specified in the warranty terms, YOKOGAWA shall not provide any warranty for the Product.
- YOKOGAWA shall not be liable for any indirect or consequential loss incurred by either using or not being able to use the Product.

■ Notes on Software

- YOKOGAWA makes no warranties, either expressed or implied, with respect to the Software Product's merchantability or suitability for any particular purpose, except as specified in the warranty terms.
- Purchase the appropriate number of licenses of the Software Product according to the number of computers to be used.
- No copy of the Software Product may be made for any purpose other than backup; otherwise, it is deemed as an infringement of YOKOGAWA's Intellectual Property rights.
- Keep the software medium of the Software Product in a safe place.
- No reverse engineering, reverse compiling, reverse assembling, or converting the Software Product to human-readable format may be performed for the Software Product.
- No part of the Software Product may be transferred, converted, or sublet for use by any third-party, without prior written consent from YOKOGAWA.

■ Notes on Hardware

● Appearance and Accessories

Check the following items when you receive the Product:

- Appearance
- Standard accessories

Contact us or your local distributor in the following cases:

- The Product coating is peeling off.
- The Product itself is damaged.
- Any accessories are missing.

If the following label turns dirty and the information on it becomes illegible, or if the label is peeling off, order a new one with the part number T9029BX to replace it.



: Label attached to the Products such as the power supply module.

● Model and Suffix Codes

The name plate on the Product contains the model and suffix codes. Verify the model and suffix codes with those in the General Specifications (GS) to ensure that the Product matches the order specifications. Should you have any questions, contact us or your local distributor.

Documentation Conventions

■ Symbols

The following symbols are used in the User's Manuals.



CAUTION

Identifies instructions that must be observed to avoid physical injury, electric shock, or death.



WARNING

Identifies instructions that must be observed to prevent damage to the software or hardware, or system failures of the Product.



IMPORTANT

Identifies important information required to understand operations or functions.

TIP

Identifies additional information.

**SEE
ALSO**

Identifies referenced content.

In online manuals, you can view the referenced content by clicking the links that are in green text. However, this action does not apply to the links that are in black text.

■ Typographical Conventions

The following typographical conventions are used throughout the User's Manuals.

● Commonly Used Conventions throughout the User's Manuals

- Δ Mark
Indicates that a space must be entered between character strings.

Example:

```
.AL $\Delta$ PIC010 $\Delta$ -SC
```

- Character string enclosed by braces { }
Indicates character strings that may be omitted.

Example:

```
.PR $\Delta$ TAG{ $\Delta$ .sheet name}
```

● Conventions Used to Show Key or Button Operations

- Characters enclosed by brackets []
When characters are enclosed by brackets in the description of a key or button operation, it indicates a key on the keyboard, a button name in a window, or an item in a list box displayed in a window.

Example:

To alter the function, press the [ESC] key.

● Conventions of a User-defined Folder

- User-defined folder name enclosed by parenthesis ()
User definable path is written in a pair of parentheses.

Example:

(RS Project Folder)\SCS0101

If the RS Project Folder is C:\MYRSPJT, the above path becomes C:\MYRSPJT\SCS0101.

■ Drawing Conventions

Drawings used in the User's Manuals may be partially emphasized, simplified, or omitted for the convenience of description.

Drawings of windows may be slightly different from the actual screenshots with different settings or fonts. The difference does not hamper the understanding of basic functionalities and operation and monitoring tasks.

■ Integration with CENTUM

The Product can be integrated with CENTUM VP or CENTUM CS 3000. In the User's Manuals, the integration with CENTUM VP or CENTUM CS 3000 is referred to as "Integration with CENTUM."

In the User's Manuals, the explanations for integrating the Product with CENTUM VP or CENTUM CS 3000, the glossary for various features of CENTUM VP is used instead of the glossary for CENTUM CS 3000. For example, the term "CENTUM VP System Alarm View" is used instead of "CENTUM CS 3000 System Alarm window." Nevertheless, if the features for integrating the Product with CENTUM VP and CENTUM CS 3000 are different, both features will be explained separately.

SEE ALSO

For more information about the functions and usage of CENTUM VP components for integrating the Product with CENTUM VP, refer to:

User's Manuals (IM), Technical Information (TI), and General Specifications (GS) of CENTUM VP

For more information about the features and usage of CENTUM CS 3000 components for integrating the Product with CENTUM CS 3000, refer to:

User's Manuals (IM), Technical Information (TI), and General Specifications (GS) of CENTUM CS 3000

■ Explanation of Hardware and Software Behaviors in the User's Manuals

In the User's Manuals, system behaviors are explained assuming that the latest versions of YOKOGAWA software and hardware at the time of publication of the User's Manuals are installed.

If additional precise information about the safety of legacy versions of software or hardware is required, a link to the corresponding explanation is provided. Please refer to the information according to your system.

■ Station Types

A safety control station (hereafter referred to as SCS) is named according to the type of the safety control unit used in it.

Table Info-1 Names of SCS and Safety Control Unit Used

Name of SCS	Model of the safety control unit
SCSV1-S	SSC10S/SSC10D
SCSP1-S	SSC50S/SSC50D
SCSP2-S	SSC60S/SSC60D
SCSU1-S	SSC57S/SSC57D

In the User's Manuals, the following abbreviations may be used to describe functions of these SCS as a whole.

- SCSV1: Abbreviation of SCSV1-S
- SCSP1: Abbreviation of SCSP1-S
- SCSP2: Abbreviation of SCSP2-S
- SCSU1: Abbreviation of SCSU1-S

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ProSafe-RS Release Information

IM 32Q01A50-31E 4th Edition

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1. Usage Notes for Revision R3.02.20

This chapter explains the points to be noted when applying the revision number R3.02.20 of ProSafe-RS.

SEE
ALSO For more information about operation of Workbench, refer to:
Workbench User's Guide

1.1 Safety Control Stations

This section describes the notice for using the safety control stations.

■ Behavior of SDV526 (100-120 VAC DO Module) in Dual-Redundant Configuration

If the standby-side SDV526 module recovers (for example, after it is replaced) while the application logic is outputting an ON signal to the dual-redundant SDV526 modules and the signal from the application logic changes to OFF immediately (within two seconds) after the recovery, it takes a maximum of two seconds until the signal output to the field changes from ON to OFF.

■ Cautions on Input Signals of DI Modules

The DI module has a software filter for filtering the input signals. The chattering signals from the field are filtered out so as to prevent the incorrect actions. Principally, only the signals elapse longer than the filter setting should be input from the DI module.

When the transient signal with the pulse shorter than the filter setting value (such as a chattering signal) repeats and prolongs, this phenomenon can be taken as a channel failure. When the DI modules are in dual-redundant configuration, either controlling-side or standby-side of the DI module may fail as a channel failure.

If an error occurs in a channel but no abnormality is found in field cables and I/O modules, it is necessary to check whether the signal itself is correct or not.

■ Cautions on Replacing SAI143 (AI Module)

When replacing dual-redundantly configured AI modules (SAI143) during maintenance, the 2-wire/4-wire pin-set on SAI143 should be properly positioned according to the actual setting on the active module. If the settings on the two modules are different, both modules may fail.

■ Lock Status at Online Change of I/O Modules

Locking of I/O modules will be cancelled when the following changes are made by online change download.

- The model of I/O modules are changed.
- I/O modules are deleted.
- Device index is changed due to the following definition change (*1)
 - Deletion-and-addition of I/O modules
 - Two single I/O modules are change into dual-redundant configuration.
 - Dual-redundant I/O modules are changed into two single modules.
- The installation position or single/dual-redundant specification of subsystem communication modules are changed. (*2)

*1: Whether or not a locked I/O module stays locked after online change download is based on Device index. A locked module will stay locked if its model and Device index remain the same after the deletion-and-addition, even if the node number or slot number is changed.

*2: If a serial communication module that is defined to be single configuration and installed in an even-numbered slot is changed to dual-redundant configuration starting with an odd-numbered slot, it is regarded as "change in installation position."

■ Deleting-and-Adding an I/O Module

In the case, for example, where an I/O module is deleted by mistake on I/O Wiring View and a module definition is added for recovery, the Device index may be changed. If online change

download is performed with a changed Device index, the locking and the inputs/outputs of the module are discontinued, even if its model, node number, and slot number are unchanged. To continue the I/O module operation, set the Device index back to the value before deletion and then perform online change download.

SEE ALSO

For more information about the behavior when online change download is performed with changed Device indexes, refer to:

- “● Online Change of Single/Dual-redundant Specification of AIO/DIO Modules” in “■ Cautionary Items for Online Change Operation” in 5.3, “Precautions for Online Change” of the Engineering Guide (IM 32Q01C10-31E)

■ Values under Forcing when Single/Dual-redundant Specification of the AIO/DIO Module is Changed

When the single/dual-redundant configuration definition of an AIO/DIO module is changed by online change download, IOM download takes place and the target AIO/DIO module is stopped and initialized. Therefore, the module's values under forcing will be initialized even if the module is locked (the input values start from the values input from the field and the output values start from the "default initial value upon power-on")

■ Adding Communication Modules by Online Change Download

In a single online change download operation, you cannot add modules for different communication functions together. This limitation comes from the inability to simultaneously download different types of communication programs to SCS, which is attempted when you try to add modules for different types of communication in a single online change download.

If you try to add two or more types of communication modules online, the following error may occur.

No. 0477: Error in database download to I/O module

Example:

```
SCS0101 IOM Download Error FIO NODE 01 SLOT 01 Error=A731
```

A731: Simultaneous downloading of different types of communication programs was attempted.

Workaround:

Ensure to add communication modules for only one type of communication in a single online change download.

The following table shows the types of communication and the corresponding communication modules.

Table 1.1-1 Types of communication and communication modules

Type of communication		Communication module to use
Subsystem communication	Modbus communication	ALR111, ALR121
	ProSafe-SLS communication	ALR121
Modbus slave communication	Serial	ALR111, ALR121
	Ethernet	ALE111
DNP3 communication		ALE111

For example, you must add only ALR111 or ALR121, which is for Modbus slave communication, in a single online change download.

Restoration:

From the SCS State Management window, run IOM download for the communication module that caused the download error.

■ Online Change Download of SCS Constants Builder Definitions

Do not download changes in the SCS Constants Builder definitions and other changes together in a single online change download operation. You need to download changes in SCS Constants Builder definitions first and then download other changes such as those made to the application logic. If you download them at the same time by online change download, the behavior of the SCS will be as follows because the SCS processes the changes in application logic first.

Example 1:

If you change the setting of [Behavior at Abnormal Calculation] from [SCS fails] to [SCS continues] and also make changes and additions to the application logic and download all the changes together by online change download, the SCS will stop if any abnormal calculation occurs in the added or modified application logic.

Example 2:

If you change the setting of [Extend Scan Period Automatically] from [No] to [Yes] and also make changes and additions to the application logic and download all the changes together by online change download, the automatic scan period extension function will not work during the downloading. This means that the online change download may not be completed if the execution time of the application logic exceeds the scan period of the application logic execution functions as a result of adding a large amount of application logic.

■ Configuration Errors Immediately after Offline Download

Even if the IOM download is performed normally during offline download, the I/O module whose front connector is left open may cause a configuration error while the SCS starts up after the offline download.

If such a configuration error occurred, plug the connector cable to the front connector of the I/O module and if necessary, supply power to the module from an external power source.

If the configuration error still remains after plugging in the front connector, there is a possibility that the IOM download to the I/O module had failed. In this case, use the [IOM Load] command on the SCS State Management window to execute IOM download manually.

■ Execution of Automatic IOM Download

If you have replaced the standby-side module of dual-redundant I/O modules while the CPU of the SCS is stopped, IOM download does not take place automatically when you start up the SCS. (*1)

In this case, use the [IOM Load] command on the SCS State Management window to execute IOM download manually or retry automatic IOM download by doing one of the following operations:

- Pull out the I/O module and insert it again.
- Turn off the power to the node where the I/O module is installed and turn it on again.
- Disconnect the ESB bus line of the node where the I/O module is installed and connect it again.

*1: Automatic IOM download does not take place if a configuration error of I/O module has occurred when the CPU modules of the SCS start up.

■ Breakpoint Usage in Target Tests

When using breakpoints on SCS Manager during target tests, the CPU module of the SCS should be in single configuration. With dual-redundant CPU modules, the following phenomena may occur.

● Control Right Switching

When the CPU modules are in dual-redundant configuration and execution of the application logic is stopped at a breakpoint, the control-side CPU module may fail and therefore control right switching is caused. This tends to occur when the scan period of the application logic execution function is short (for example, 50 ms). When the scan period is 100 ms or longer, this phenomenon does not occur unless tag data are referenced from CENTUM HIS or other system.

Workaround:

There is no workaround for this problem.

Restoration:

If the control-side CPU module fails, it automatically restarts once. If the CPU module does not restart, restart it manually.

● APC Does Not End

If the execution of the application logic is stopped at a breakpoint while APC is running, the APC may not be completed. However, this rarely happens. It should also be noted that APC may not be completed if it is started while the application logic is stopped at a breakpoint. In these cases, the APC does not end even if you delete the breakpoints.

Workaround:

There is no workaround for this problem. Use breakpoints after APC is completed.

Restoration:

Delete the breakpoints, and then restart the standby-side CPU module so that APC runs again.

■ Messages Output upon Control Right Switching of Dual-redundant CPU Modules: SCSP2

In SCSP2, if a control right switching of the CPU module occurs during failure of one of the power supply modules of an I/O node or failure of one of the back board buses (SB bus) of any I/O module, the following diagnostic information messages may be generated.

- Recovery (No. 0068) and failure (No. 0067) of a power supply module of a node
- Recovery (No. 0086) and occurrence (No. 0085) of a communication error in an I/O module

Also note that, if a control right switching of the CPU module occurs when one of the ESB buses connected to a node has failed and an I/O module is pulled out, the following diagnostic information message may be generated for the module that is pulled out.

- I/O module database error occurred (No. 0083)

Workaround:

There is no workaround for this problem.

Restoration:

You do not need to take action because only the diagnostic information messages are generated.

■ Messages Output when Standby-side CPU Module is Inserted: SCSP2

When a stand by-side CPU module (SCP461) is inserted while the SSC60D-F (Duplexed Safety Control Unit (for Vnet/IP, Wide Range Temperature Type)) is running with a single CPU module, the following diagnostic information messages may be generated:

- Safety control station fan alarm (No. 0041)
- Recovery from safety control station fan alarm (No. 0042)

If the recovery message is generated, you do not need to take action.

■ Behavior at Start Up of an SCS: SCSP2

When an SCSP2 starts up, a diagnostic information message indicating module failure (No. 0081 Code = C580) is generated for each ALR111/ALR121/ALE111 defined for Modbus slave communication and then a recovery message is generated (No. 0082) for each of the modules.

Workaround:

There is no workaround for this problem.

Restoration:

You do not need to take action because the SCS recovers from the error by itself.

■ Note on the Use of Communication Module for Modbus Slave Communication: SCSP2

If any ALR111/ALR121/ALE111 is used for Modbus slave communication in SCSP2, the scan period for application logic execution functions should be set to 100 ms or longer.

Setting a scan period shorter than 100 ms may result in an error in Modbus slave communication.

■ Replacement of CPU Module in Stand-alone SCS Configuration

When you replace one of the dual-redundant CPU module of the SCS that is running in stand-alone SCS configuration, a diagnostic information message informing "GPS interface unit error" (No. 4129) may be generated regardless of whether GPS is used or not. However, you do not need to take any action because the SCS is normal even if this message appears. A recovery message (No. 4130) is generated after the replacement of the CPU module is finished.

■ Notice on Supplying Power to One of a Pair of Power Modules of a Node

In the case, for example, when an SCS is configured to be powered by dual-line power supply, if power to the paired power modules in the SCS or its node is turned on one by one, the digital input or output modules (SDV144, SDV521, SDV531, and SDV541) may fail to start. This phenomenon occurs very rarely.

Under this situation, you will find the message "IOM model Code Error (0x0000 5102)" on the IOM Report of SCS Maintenance Support Tool.

This phenomenon may occur when power is supplied one by one for each side of the paired power modules in an SCS where a node is installed with more than three analog input or output modules (SAI143, SAV144, or SAI533).

Nevertheless, it does not mean that the I/O modules are abnormal.

Avoidance:

Turn on the power to both of the dual-redundant power modules at the same time.

Restoration:

If the digital input or output modules in a node fail to start when power is turned on one by one for the power modules, and "IOM model Code Error(0x0000 5102)" is indicated in the IOM Report, turn on the power supplies again before enabling the output of the SCS (before executing the Output Enable operation).

■ Behavior at event acquisition request on DNP3 slave function: SCSU1

When DNP3 master sends an event acquisition request by specifying a quantity and then multiple response frames from the SCS are returned, the SCS may send more than the specified quantity of events. The total quantity of events that the SCS sends is the quantity of all specified classes or all specified data-type events that are stored in the SCS event buffer.

This phenomenon happens when Multi fragments are selected as "Type of response message fragmentation" and multiple response frames are returned. When Single fragment is selected, the SCS behaves according to the specification. (The SCS returns events that can be stored in the maximum size frame as a response.)

If there is a possibility that multiple response frames to the event acquisition request where a quantity is specified are returned, select Single fragment. Number of events that can be stored in one response frame is as follows:

- 32bit Analog Input with timestamp: 132
- Binary Input with timestamp: 198

Workaround:

There is no workaround for this problem.

1.2 Engineering

In this section the cautions regarding engineering work are explained.

■ Project Comparing Tool

● Differences between POUs

If there are POUs that are written in FBD and have no differences except comments for variables indicated in a diagram and Short Name (a name representing a parameter) for user-defined FU/FB, difference detection between them concludes as no modifications, which results in being unable to show or print details.

However, the above differences will be marked if POUs have differences other than the above.

Restoration:

Confirm whether comments for variables or Short Name are different when you perform difference detection in a variable overview or a parameter overview.

● Comparing with an Imported Project

When you try to compare a project (hereinafter referred as Project 1) with another project (hereinafter referred as Project 2) which has been newly created and the entire contents of Project 1 has been imported, differences may be detected in the following data at the event of comparison by means of a project comparing tool.

- DefinedWord
- GlobalVariables
- DetailedBinding
- LocalVarsAndParams (local variables and parameters)
- ResourceContent (POU overview)

When you import to regenerate a project, ensure that the above data with detected differences has no differences by means of Cross Reference Analyzer. Cross Reference Analyzer is capable of finding no differences correctly.

Workaround:

There is no workaround to compare Project 1 and Project 2 directly by means of project comparing tool.

To verify the differences from the original project data by using the project comparing tool after you modify the imported data, you need to save and keep either of the following data as a reference of comparison.

- Copy of the project 2 immediately after the import.
- Master project which is generated by offline downloading immediately after the import.

Compare either of the above projects to the one you have modified by means of project comparing tool.

Restoration:

There is no workaround for this problem.

■ Online Change Download

● Online Change the Definition of Bindings for the Inter-SCS Safety Communication

The definition of bindings for the inter-SCS safety communication cannot be changed online. If a definition of binding is added or deleted, a warning message will be displayed when running build. And the online change downloading will end with an error.

However, under the following circumstance, no warning message will be displayed and the online change downloading can be performed successfully though the changed bindings are not properly functioning for the inter-SCS safety communications. So, the operations below must be avoided before performing online change downloading:

- Moves a consuming side binding variable to a different binding group on the consuming side.
- Moves or copies a producing side binding variable to a different binding group on the producing side.

Restoration:

If the above changes were performed, offline downloading should be performed instead of online change downloading.

■ Online Monitoring

● Online Monitoring after Upgrading SENG

After upgrading SENG to R1.01.30 or a later revision and running build, when starting Debug Mode without downloading to SCS (either online or offline), the following error messages will occur for online monitoring:

```
FI20861.LTRP: Adding variable for spy has failed! No symbol table for debug found!
```

```
FI20861.OUT: Adding variable for spy has failed! No symbol table for debug found!
```

Workaround/Restoration:

After upgrading SENG to R1.01.30 or a later revision and running build, it is necessary to perform downloading to SCS (either online or offline) before starting Debug Mode.

● Windows for Online Monitoring

When performing online monitoring, do not use window other than those below:

- I/O Lock Window
- Multi-Language Editor
- Dictionary
- Spy List Window

● Generate Debug Information

After offline downloading, if the [Generate debug information] of a POU is changed from OFF to ON and then online downloaded, the "Call stack is in overflow" error dialog box may be displayed twice for each step when the Workbench is in Debug mode and running the step debugging.

Workaround:

If you change the setting of [Generate debug information], perform offline downloading. If you are executing the SCS Simulator, you should restart it.

Restoration:

Perform offline downloading. If you are executing the SCS Simulator, you should restart it.

- **Online Monitoring FBD**

At first, you use Multi-Language Editor to open an FBD and change a function block into a function or an operator. Then save the modified contents only once, build and download the FBD. When you execute online monitoring of the FBD, the output of the modified function or operator may be indicated with "???".

Workaround:

After changing a function block into a function or an operator, the modified contents need to be saved twice. And then build and download.

The same phenomenon of "???" indication also occurs in Logic Simulator and SCS Simulator. Therefore, it is necessary to confirm on the Logic Simulator and SCS Simulator that the "???" indication is not existing, and then start downloading.

Restoration:

Open the FBD that calls the erroneous function or operator, and then save the FBD and build. And then perform online download the FBD.

- **Drag and Drop on Link Architecture View**

On Link Architecture View, when you change a user-defined function block into a user-defined function with drag and drop operation, and then build and offline download without opening and saving the POUs that call the modified user-defined function, the output of the modified user-defined function will be displayed "???" at monitoring.

Workaround:

Before build and offline download, the POUs that call the dragged and dropped function need to be saved. And then run build and offline download.

The same phenomenon of "???" indication also occurs in Logic Simulator and SCS Simulator. Therefore, it is necessary to confirm on the Logic Simulator and SCS Simulator that the "???" indication is not existing, and then start downloading.

Restoration:

Open the POUs that call the erroneous function, and then save and build the POUs and then perform online download of the POUs.

■ I/O Lock Window

- **Online Change Download**

If you perform an Online change download, close the I/O Lock Window.

■ Workbench

- **POU Name**

The POU names (including FU/FB, user-defined FU/FB, libraries registered FU/FB and program) should be unique to each other.

- **Interruption from Keyboard during Data Transmission**

Do not perform unnecessary keyboard operation during data transmission such as saving data to the hard disk or sending data to SCS by Workbench.

Do not type any key on the keyboard especially during the following operations:

- Build
- Offline Download

- Master Database Offline Download
- Online Change Download
- IOM Download
- Restore Master Database
- Version Control Check-In/Check-Out

● **Display in Dictionary View**

When you are using Dictionary View in Debug/Simulation mode while [Locked variables] or [Unlocked variables] is selected for filtering, the display in the Dictionary View will be as follows if you change the variable group or variable scope on the tree shown in the left pane.

- Filtering is disabled and all the variables that belong to the selected variable group or scope are displayed regardless of whether the variables are locked or not.
- The filter status indicated in the upper right of the window remains unchanged even after the filter is disabled.

Workaround:

There is no workaround for this problem. You can find out whether the variables are locked or not by the yes (locked) or no (not locked) indication in the [Locked] column of the Dictionary View.

Restoration:

After you have changed the variable group or variable scope, always select [All variables] to cancel the filtering and then re-select the filter ([Locked variables] or [Unlocked variables]) you want to use.

● **Use of LD Element OR in FBD**

If the LD element, OR(LD Vertical OR Connection) is used in FBD, incorrect database which does not behave as expected may be generated.

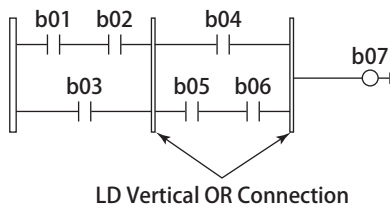


Figure 1.2-1 Error example

Workaround/Restoration:

Use the OR operator instead of the LD Vertical OR Connection.

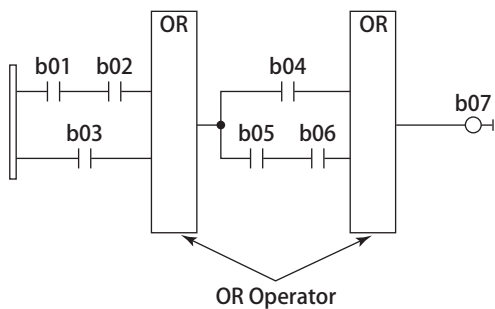


Figure 1.2-2 Correction

- **Character-string Constant**

If you want a '\$' to be denoted in a character-string constant, it should be '\$\$' according to the rule. But if a character-string constant ends with a '\$', a Build error is raised.

If you need to end a character-string constant with '\$\$' to denote '\$', use '\$24' for the '\$\$'.

- **Error Messages Displayed on Workbench**

The operation messages displayed on Workbench are explained below.

- **Build a Project without POU**

When building a project without POU for the second time, the following error message will be displayed.

```
ERROR: GetFileAttributesEx (File Path)\Symbols_Target.xtc.
```

```
ERROR: CRHESymAccess::Load error 0x2.
```

```
Generation was aborted.
```

Workaround:

Create a POU before build the project.

Restoration:

Choose [Clean Project] from [Project] menu of Workbench, then the error message will not be displayed.

- **Build**

Suppose, an FB (referred to as FB-B) and another FB (referred to as FB-A) that uses the FB-B as parameters exist.

If the FB-B is deleted from the POU tree on the Resource window (it also means that the FB-B no longer exists), but the parameters used on FB-A are not deleted, the following message will occur when running build:

```
Error: A Type of variable is empty.
```

Under this circumstance, the FB-B parameters (including instances) used in FB-A should all be deleted and then run build again.

Workaround/Restoration:

Check the FB hierarchies so as to understand their relationship and then delete the FB properly.

- **Initializing Arrayed Variables in ST**

If initial value is set to only part of elements in an array with local variables in FU, the following build error is raised. Specify an initial value to all the elements in the array.

```
Err 0059-0000:(2):, :unexpected statement
```

- **Online Change Download Error**

If you exit the Debug mode while Workbench is running and try to execute online change download, the online change download may fail with the following error message.

```
ERROR:On-line change download is not executed under Debug or Simulation mode.
```

This error occurs if you start the Debug mode on Multi-Language Editor and immediately (before data monitoring starts on Multi-Language Editor) exit the Debug mode from Workbench.

Workaround:

After you start the Debug mode, do not exit the Debug mode until the data monitoring display starts.

Restoration:

Exit Workbench and start it again.

■ Cross Reference Analyzer

● REAL Type Constant in POU

If a REAL type constant is used in a POU, there will be a discrepancy between R2.01 and previous versions databases. However, this discrepancy will be indicated in green on Cross Reference Analyzer. There is no need to test it again.

However, if REAL type constant is used in an expression with (=) or (<>) comparator, the true or false result may be different from the expected result.

If accurate comparison operation (=, <>) on REAL type is detected, Integrity Analyzer displays a warning. In this case, you need to check the expression and make sure if the program needs to be enhanced using "smaller than (<)" or "greater than (>)." If the expression in the POU is correct and there is no need to modify the program, you can ignore the warning message on Integrity Analyzer and you can download it to SCS.

● "Instruction modified" Notification

According to the technical specification, from R1.01.30, upon the following operations, the Cross Reference Analyzer will display the "Instruction modified" notification. Thus, the POU should be tested.

- When upgrading SENG from R1.01.00/R1.01.10 to R1.01.30 or a later revision, the "Instruction modified" will be notified for the user-defined FU that contains local variables.
- If you switch the setting of [Generate debug information] (*1) of a POU described in LD or ST, the message "Instruction modified" will be notified to all the POUs containing a user-defined FU or a user-defined FB.
- When checking or un-checking the [Generate symbols monitoring information] (*2) of a POU, the "Instruction modified" will be notified for the POU.

*1: [Generate debug information] is on the [Code Generation] tab of the POU properties sheet.

*2: [Generate symbols monitoring information] is on the [Code Generation] tab of the POU properties sheet.

■ Self-Documentation

● Modifying Character Strings for the Cover Page

The character strings to be printed in the cover page of the document can only be modified in backward-compatible mode. Use the following procedure to modify them.

1. In the Customize dialog box, deselect the checkbox of [Enhanced printing style] to select backward-compatible mode.
2. Launch Document Generator.
3. In the [Options] tab page, click the [Edit] button in the [Header/Footer] group box to open the Header/Footer dialog box.
4. In the Header/Footer preview of the Header/Footer dialog box, edit the second and third lines of the title strings and click [OK].

If you do not use the backward-compatible mode any longer, close Document Generator and select the checkbox of [Enhanced printing style] in the Customize dialog box.

■ Library Project

● Debugging Library Project

While the SCS project is being debugged, if a step-in is made to the FU/FB in LD or ST defined in the library project, no yellow arrow is shown to indicate where in the FU/FB in the library project is being executed. That is, where in the Library FU/FB is being executed is not shown, also you cannot set a breakpoint in the FU/FB defined in the library project.

Workaround:

If you want to debug FU/FB defined in the library project, open the library project using the Workbench and change the mode to 'Simulation' before you start debugging.

■ Importing and Exporting

● Put Tested Contents of User-Defined Project to Current Project

When using Test Functions, you may make a user-defined project that uses a Library project. After testing, the tested contents need to be put into the current project.

When you put the tested contents from the user-defined project created by Test Project Creating Tool, use the following procedure to export and then import to the current project.

1. Change the target name of the user-defined project into SCS_TARGET.
2. On the user-defined project, change its library path to the path for LIBRARIES of the current project.
3. Export the entire user-defined project.
4. Import the entire project exported in step 3 to the current project.

● Import of I/O Device Instances

When you import only I/O device instances, if the importing project contains a different type of I/O module that having the same Device index, the definitions of that module will be overwritten. As a result, the wiring of the original I/O module in the importing project is lost. Incomplete wiring results in build errors; so if this problem occurred, check the I/O modules in the source project and the importing project and make the correct definitions.

Workaround:

There is no workaround for this problem.

If the Device index value of the I/O module to be imported is already used in the importing project and you don't want the existing I/O module to be overwritten, change (delete-and-add) the Device index to a value that is not used in the importing project before you export the I/O device instance.

Restoration:

If the existing module definition is overwritten with the definition of a different type of module, the wiring is lost. In this case, delete the unwanted I/O module, re-create an I/O module you need, and then make the necessary wiring.

■ Test Project Creating Tool

● Project Path

On Test Project Creating Tool, the path for copying the project to the target project should not contain any space character.

If the path contains any space character, an error message dialog box will be displayed when generating the copying target project.

If the project path contains any space character, the project cannot be opened on SCS Manager.

1.3 SCS Maintenance Support Tool

This section explains cautionary notes on using SCS Maintenance Support Tool.

■ SCS System Report Display

The following are limitations on the information displayed in the SCS Report that is called up from the SCS State Management window.

SCSP1/SCSV1:

- In dual-redundant operation, no information is displayed for [VEHICLE Revision] of the standby-side CPU module ("..." is displayed). You can find out the revision from the indication of "F2" on the label on the CPU module.
- When the standby-side CPU module is not in the standby state (stopped or APC is running), information on the standby-side CPU module is not displayed.

SCSP2:

No limitations

1.4 Integration with CENTUM

In this section, cautions on Integration with CENTUM are explained.

■ Accessing the SCS Global Switch Communication Data Received by FCS on HIS

The FCS application can handle the SCS global switch communication data sent from SCS as %GS, but the %GS data received by FCS cannot be accessed on HIS.

If you need to confirm the %GS data on HIS, check its source data, SCS global switch communication data.

If you want to access data received by FCS on HIS, change the data to another element such as %SW using the FCS application. Or connect to the switch instrument block and access the data on it.

The behavior when the %GS of FCS corresponding to the SCS global switch communication data is accessed on HIS is as follows:

- If you try to call the %GS from the NAME Input dialog box or Graphic windows and so on, an error message appears and its faceplate is not shown.
- %GS cannot be used for accessing process data.
- %GS cannot be used for accessing process data through OPC.
- If you use the %GS in a sequence table, FCS processes it correctly. However you double-click the tag name in the Sequence Table View on HIS, neither error message nor faceplate for the tag name is shown.

**SEE
ALSO**

For more information about how to confirm the SCS global switch communication data on HIS, refer to:

“■ Software inputs/outputs” in D1, “Integration with CENTUM” in “Safety Control Station Reference” (IM 32Q03B10-31E)

■ SCS System Report Display

The following are limitations on the SCS Report that is displayed on a CENTUM HIS.

SCSP1/SCSV1:

- In dual-redundant operation, no information is displayed for VEHICLE Revision of the standby-side CPU module ("..." is displayed). You can find out the revision from the indication of "F2" on the label on the CPU module.
- When the standby-side CPU module is not in the standby state (stopped or APC is running), information on the standby-side CPU module is not displayed.

SCSP2:

No limitations

1.5 SOE (Sequence of Events)

In this section, notes on SOE usage are explained.

■ SOE OPC Interface Package

- **Setting IT Security**

Ensure to execute the IT security tool from the start menu after you activate a license for the SOE OPC interface package (CHS2200)

- **When Microsoft Visual Studio is Used**

If the SOE OPC Interface package is installed into a PC where the Microsoft Visual Studio is already installed, a dialog box with the following message may appear when the PC is shut down. This dialog box may also appear after installing ProSafe-RS to the same PC.

```
"ZOPHDA.exe Application Error The instruction at XXXX referenced memory at XXXX."
```

Workaround:

The SOE OPC Interface package should not be installed to the PC where the Microsoft Visual Studio is installed.

Restoration:

Click the [OK] button on the message dialog box.

- **Note on PRM Client**

PRM client and CHS2200 SOE OPC Interface Package software should be installed separately in different PCs. If they are installed in the same PC, the SOE OPC server function will stop.

1.6 Access Control and Operation History Management Package

■ Browsing Modification Files

When you start operation history management without upgrading the revision of SCS project which has been created in a SENG running R2.01 or below, you can not browse modification files of POU's in the operation history database.

Workaround:

If an SCS project is created in a SENG running R2.01 or below, you need to upgrade revision of project data before you start operation history management.

Restoration:

Perform the following steps to restore.

1. Stop operation history management.
2. Delete the affected modification file database in the operation history database.
3. Open the SCS project on SCS Manager to upgrade the revision.
4. Start operation history management.

■ Operation Logging

● Operation Logs of IOM Download Operations

For IOM download operations, the strings shown in the message display area are not recorded in the log file.

Workaround:

There is no workaround for this problem.

For the details of the results of operation, refer to the corresponding diagnostic information messages.

You can use SOE Viewer to check the diagnostic information generated in the past.

If SOE Viewer is not available, you can use the Diagnostic Information window to save the diagnostic information in a file.

Restoration:

There is no workaround for this problem.

■ Modification Files Viewer

When Resource Content data containing POU overview information is displayed, numbers to indicate the execution order of Programs are not indicated. Therefore, you cannot tell whether the order of Program execution is different even though you perform difference detection between two Resource Contents.

Workaround:

When Resource Content data is displayed not in the difference display mode, Programs are shown in the order of execution. Confirm the execution order from the displayed order.

Restoration:

There is no workaround for this problem.

1.7 Miscellaneous

In this section, additional notes are explained.

■ Installing to a PC where PRM Client Coexists

If you install ProSafe-RS R3.02 to a PC where you intend to have PRM client coexisting and then try to install PRM without restarting the PC, the PRM installation fails.

Workaround:

The following two options are available to avoid this issue. Take one of either action to avoid.

- Install PRM first and then install ProSafe-RS R3.02.
- Install ProSafe-RS R3.02 first and then restart the PC immediately to install PRM.

Restoration:

There is no restoration procedure for this scenario.

■ Installation of ProSafe-RS Software Package

It is prohibited to allow users to connect remotely to a PC installed with the ProSafe-RS software package by using the Remote Desktop feature.

If you try to install the ProSafe-RS software package in a Windows Server 2008 PC set up to use Remote Desktop, the installation will fail.

Workaround:

On the PC to be installed with the ProSafe-RS software package, do not make setting to use Remote Desktop.

Restoration:

After you change the setting so as not to use Remote Desktop, restart the PC and then install the ProSafe-RS software package.

■ Security

Notes on securities are explained as follows.

● Notes on Selecting Standard Model of IT Security Settings

When standard model of IT security settings is selected, if the NetBIOS is not used, the name of the computer where the ProSafe-RS project is located needs to be indicated by DNS or described in LMHOSTS file for name solution.

LMHOSTS file can be found in the following path: %Systemroot%\system32\drivers\etc

%Systemroot% is the directory where the Windows operating system files are installed. If the system drive is drive C, the path to the file is

C:\Windows\system32\drivers\etc

An example script in the LMHOSTS file is as follows, Assuming that the IP address of STN0164 is 172.17.1.64.

```
##### lmhosts
172.17.1.64 STN0164 # PRE
```

- **Domain User Name and Password Entry when Restoring Security Settings by IT Security Tool**

If you log on to a PC connected in a domain as a local user and try to run the IT Security Tool to restore the settings of standalone environment, the tool requires to enter a domain user name and password despite that user management is standalone type. If required, enter the domain user name and password.

- **Cautions when Restoring IT Security Settings**

When you use IT Security Tool to restore the IT security settings in a file that was saved on a domain controller, the security settings cannot be restored as you expect if the user/group information at the time of restoration differs from that when the security settings were saved.

This applies to the cases, for example, where any of the following changes have been made after the saving of IT security settings:

- Delete a user or group.
- Delete a user or group and create it again.
- Change the group to which a user belongs.

If you run the restoration in a situation different from that when the security settings were saved, the security settings will be as shown below. Modify the IT security settings as necessary.

- When groups existed at the time of saving exist on the current domain controller
The information on user assignments to the groups at the time of saving is added to the user assignment information existing in the domain controller. You need to modify the IT security settings so that the assignments of users to groups are consistent with the current situation.
- When groups existed at the time of saving do not exist on the current domain controller
The groups existed at the time of saving is restored as local groups of the domain. The local groups have no effect on system operations, but delete them if necessary.
- When users existed at the time of saving exist on the current domain controller
The information on user assignments to groups at the time of saving is added to the user assignment information existing in the domain controller. You need to modify the IT security settings so that the assignments of users to groups are consistent with the current situation.
- When users existed at the time of saving do not exist on the current domain controller
An error occurs. Even if the error has occurred, the IT security setting items other than those related to users and groups are restored correctly.

■ License Management

- **Tasks Required After the Station Configuration of a License Project is Changed**

If you have changed the station configuration of a license project, excluding the changes related to FCS and SCS, perform the tasks shown in the following table. Note that changing the station configuration refers to addition and deletion of stations and renaming of computers.

Table 1.7-1 Tasks Required After the Station Configuration of a License Project is Changed

Change in station configuration	Task
Add a station	Distribute and accept licenses on the added station. Then, distribute master licenses to the other stations.(*1)

Continues on the next page

Table 1.7-1 Tasks Required After the Station Configuration of a License Project is Changed (Table continued)

Change in station configuration	Task
Delete a station	After deleting a station, distribute master licenses to all stations.(*1)
Rename a computer	Distribute and accept the licenses on the station you have changed the computer name. Then, distribute master licenses to the other stations.(*1)

*1: Destinations of license distribution are PC-based stations such as HIS, PCs installed with system builders, APCS, GSGW, SIOS, and UGS; FCS and SCS are not included. Distributing a master license does not require license acceptance on the destination station or restarting of the destination station. Master license distribution is basically used to redistribute the license information that is already distributed to specified stations; however, only the station configuration is updated here.

■ Cautions on Using Task Manager and Reliability and Performance Monitor

On Windows Vista, if you select the Networking tab in Task Manager or start the Reliability and Performance Monitor in Administrative Tools, the Task Manager or the Reliability and Performance Monitor may become unresponsive. This can cause the following phenomena.

- If you run SENG logsave, it locks up.
- You cannot log off/restart/shut down from the Start menu.
- You cannot exit the unresponsive Task Manager.
- You cannot open Control Panel.
- You cannot open the "Connect to a network" window.
- Network related commands (such as ipconfig and netstat) lock up.

To workaround, observe the following:

- In Task Manager, do not select the Networking tab.
If the Networking tab is already selected when you open Task Manager, select another tab and close Task Manager. Then, open Task Manager again.
If you mistakenly select the Networking tab after you open Task Manager, do the same.
- Do not start the Reliability and Performance Monitor in Administrative Tools.
If you started the Reliability and Performance Monitor, close it.

Once Task Manager or Reliability and Performance Monitor has become unresponsive, the PC is unstable. Therefore, follow the procedure below at the earliest possible time to restart your PC.

1. Start Command Prompt and type "shutdown /s". The PC will shutdown.
2. Power-on the PC to restart.

■ Abnormal termination of Adobe Reader

When a user's manual is displayed in Adobe Reader version 10 or earlier, if you move to other manual by clicking a reference link and try to go back to the previous manual, Adobe Reader terminates abnormally due to Adobe Reader's fault.

Workaround:

There is no workaround for this problem.

Recovery:

Call the manual that you displayed again.

■ Pressure Clamp Terminal Block for Analog Signals, Dual-Redundant Use

For the 'SAI143-H Analog input module with HART communication' that was newly supported in the software revision R1.02.00, do not use the style 1 (S1) of the following 'Pressure clamp terminal blocks for analog signals, dual-redundant use' ("S1" is appended to their model name printed in the lower left corner of their surface):

- STA4D-00 S1 (Pressure clamp terminal block for analog signals, dual-redundant use (without surge absorber))
- STA4D-10 S1 (Pressure clamp terminal block for analog signals, dual-redundant use (with surge absorber))

Revision Information

Title : ProSafe-RS Release Information

Manual No. : IM 32Q01A50-31E

Jan. 2015/4th Edition/R3.02.20 or later*

* Denotes the release number of the Software Product corresponding to the contents of this Manual. The revised contents are valid until the next edition is issued.

Introduction	ProSafe-RS Document Map has been deleted, and a description of Safety, Protection, and Modification of the Product has been changed.
1.1	“Adding Communication Modules by Online Change Download” has been changed. “Behavior at event acquisition request on DNP3 slave function” has been added.
1.6	“Restrictions of Access Control” has been deleted.
1.7	“Notes on Adobe Reader” has been deleted and “Abnormal termination of Adobe Reader” has been added.

Oct. 2013/3rd Edition/R3.02.10 or later

Introduction	Description of station types has been changed.
1-18, 1-19	New descriptions have been added.
1-21	Some descriptions have been deleted.

Dec. 2012/2nd Edition/R3.02 or later

1-8, 1-21	Deleted.
1-11, 1-15	Some descriptions have been deleted.
1-19, 1-20, 1-22	Some descriptions have been deleted, and new descriptions added.

Aug. 2011/1st Edition/R3.01 or later

Newly published

■ For Questions and More Information

Online Query: A query form is available on the following URL for online query.
<http://www.yokogawa.com/iss>

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