Integrated Simulation Introduction Guide

Smart Platform

OMRON

Contents

Introduction
- To read the PDF files, you need Adobe Reader, a free application distributed by Adobe Systems.
- The screen views used in this guide may be different from the actual view, and be subject to change without notice.
- The product names, service names, function names, and logos described in this guide are trademarks or registered trademarks of their respective companies.
- The symbols (R) and TM are not marked with trademarks and registered trademarks in this guide respectively.
- The product names of the other companies may be abbreviated in this guide.
- Microsoft product screen shots reprinted with permission from Microsoft Corporation.
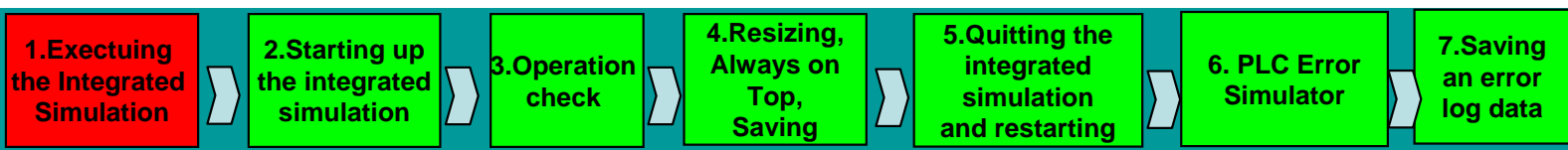
1. Executing the Integrated Simulation (Starting up the CX-Programmer)

Selet[Start]-[All Programs]
-[OMRON]-[CX-One]
-[CX-Programmer]
-[CX-Programmer]

When using Windows Vista or later OS, click mouse right button and select [Run as administrator].
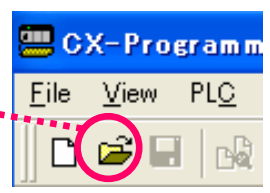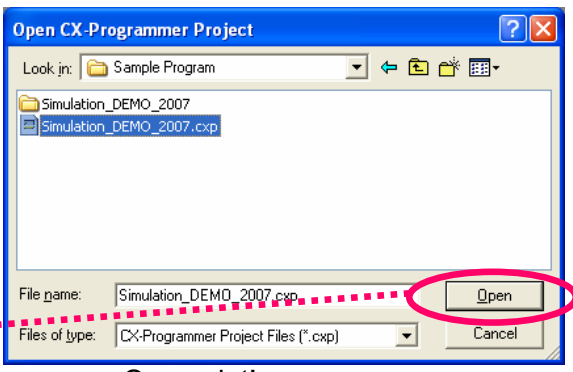

3
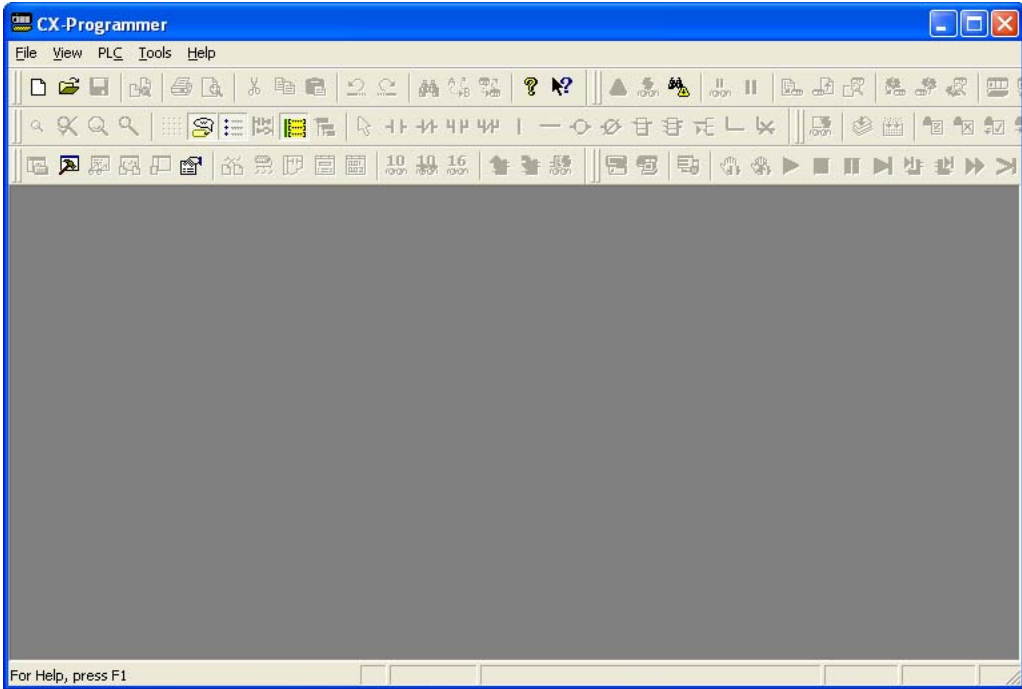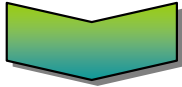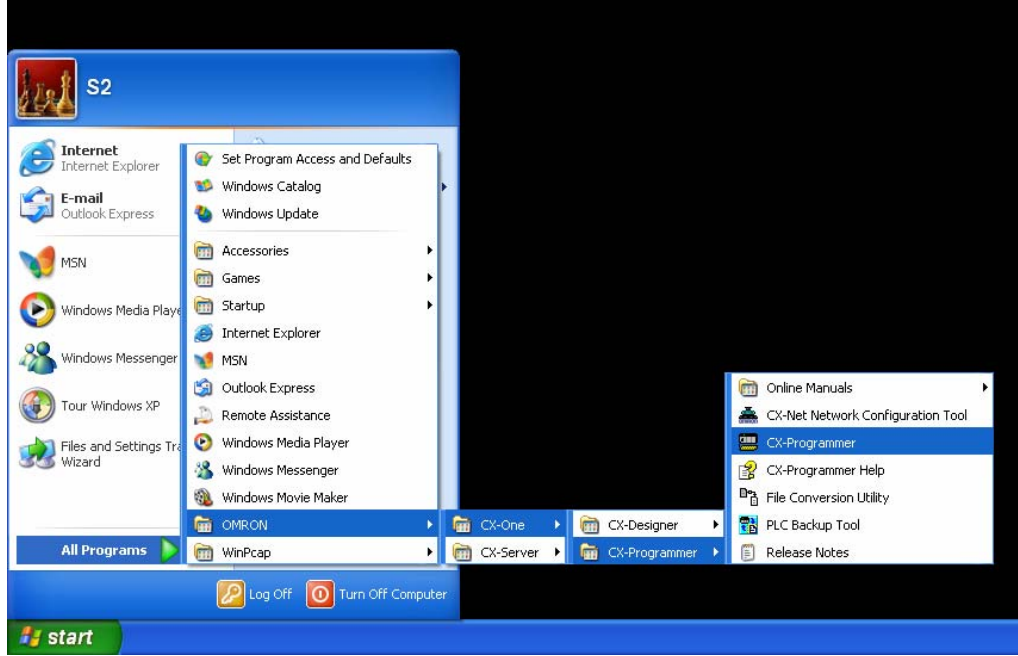
2. Opening a Project and Starting up the Integrated Simulation

Executing the "Integrated Simulation" that is easier to use.

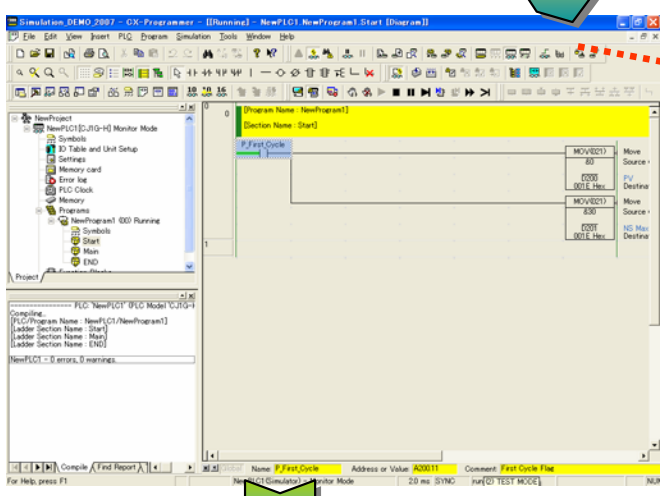Left-click an icon with the mouse to open the project.

Open the ladder program data.
C:¥Program Files¥OMRON¥CX-One¥Sample Program¥Simulation_DEMO_2007.cxp
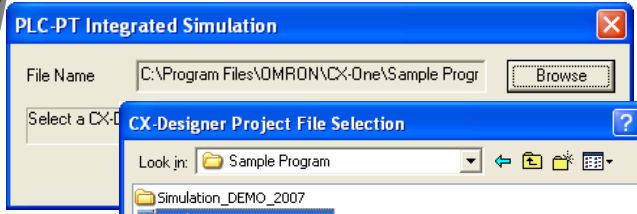
Click Open

Confirm the program.

One point!

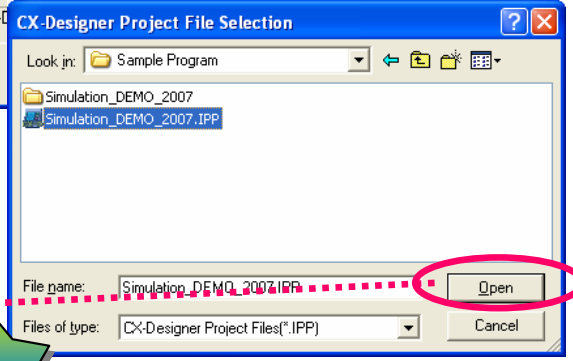Cannot find an icon! Then...

Select [View]-[Toolbars] on the menu.

Enable to switch all tool bars and display /nondisplay of window.

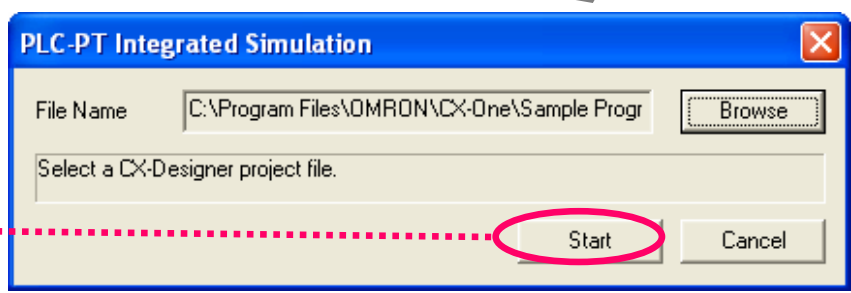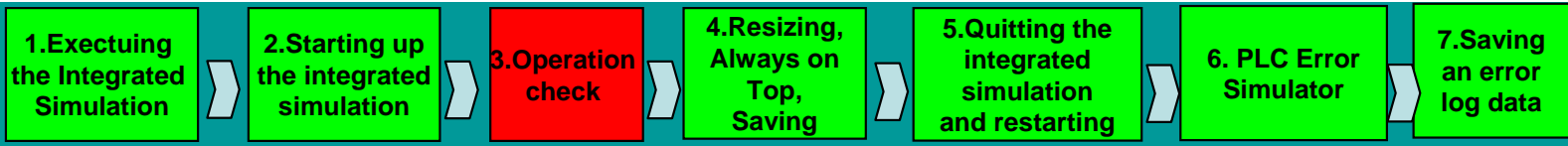Left-click an icon with mouse to start up the integration simulation.

Start PLC-PT Integrated Simulation

PLC-PT Integrated Simulation

File Name   C:\Program Files\OMRON\CX-One\Sample Progr   Browse

Select a CX-D

CX-Designer Project File Selection

Look in: Sample Program

Simulation_DEMO_2007
Simulation_DEMO_2007.IPP

File name: Simulation_DEMO_2007.IPP   Open
Files of type: CX-Designer Project Files(*.IPP)   Cancel

Select the CX-Designer which interact with.
C:¥Program Files¥OMRON¥CX-One¥Sample Program¥Simulation_DEMO_2007.IPP

Click Open

Open CX-Programmer Project

Look in: Sample Program

Simulation_DEMO_2007
Simulation_DEMO_2007.cxp

File name: Simulation_DEMO_2007.cxp   Open
Files of type: CX-Programmer Project Files (*.cxp)   Cancel

PLC-PT Integrated Simulation

File Name   C:\Program Files\OMRON\CX-One\Sample Progr   Browse

Select a CX-Designer project file.

Start   Cancel

Click Start

to start up the integrated simulation

4

3. Operation Check

Ladder program is operated simultaneous with a screen.

No operation required.
Wait for about 30 second..

The following operations are automatically executed.
Starting up the CX-Simulator ,Connection, Ladder transfer,
Starting up the CX-Designer, Test screen (TEST MODE screen)

CX-Designer

CX-Simulator is running.
Please wait..

If an error message is displayed on CX-Programmer or CX-Simulator, press the cancel button to stop executing the test function.

Cancel

【 Test tool 】
The address used on the screen is displayed

The CX-Programmer (CX-Simulator) of the back is [Monitor mode].

PV on the screen is added automatically by pressing the "RUN" button.
The "STOP" button lights up when PV reaches SP

The message is displayed when PV exceeds 20, or PV reaches SP.

Click the "RUN" button

PV returns to 0 by pressing the "RESET" button.

Click the "RESET" button

The "Stop" button lights up when PV reaches SV
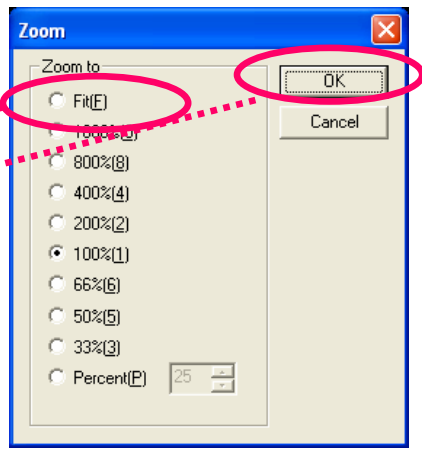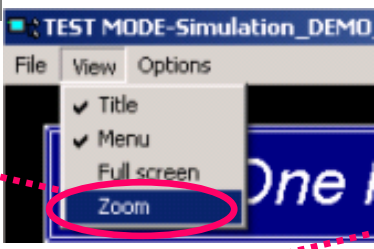
5

4. Resizing/Always on Top /Saving a Location

The following contents are available on the TEST MODE screen (test screen) of the CX-Designer.
1) Resizing   2)Always on Top 3)Saving a location
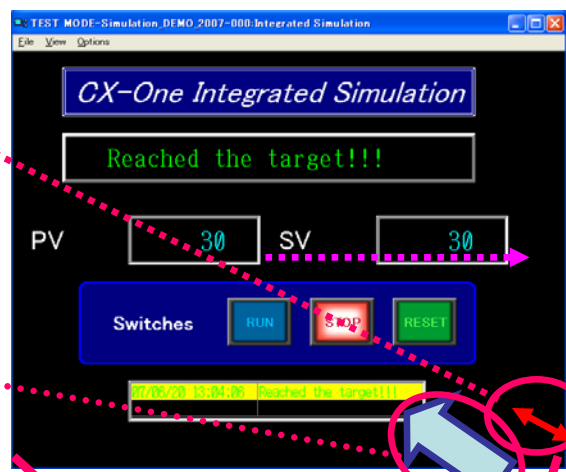
4.1. Resizing a Screen

Click [View]-[Zoom] on the menu of "TEST MODE".

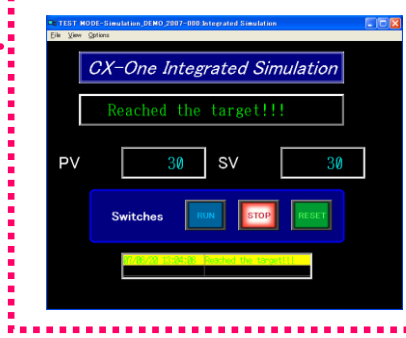Select [Fit] on the [Zoom] dialog and press the [OK] button.

Point the cursor to the lower right of "TEST MODE". The shape of a mouse icon is changed to a right and left arrow.

Drag to the upper left corner with the left mouse button clicked.

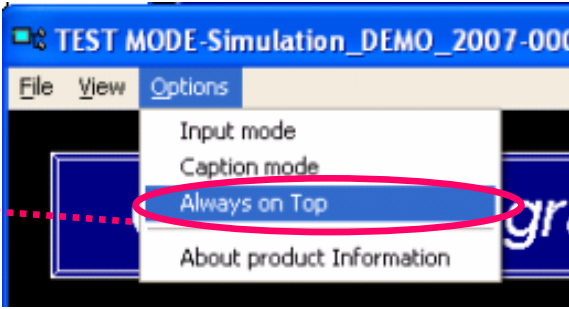The size can be changed when releasing the left mouse button.
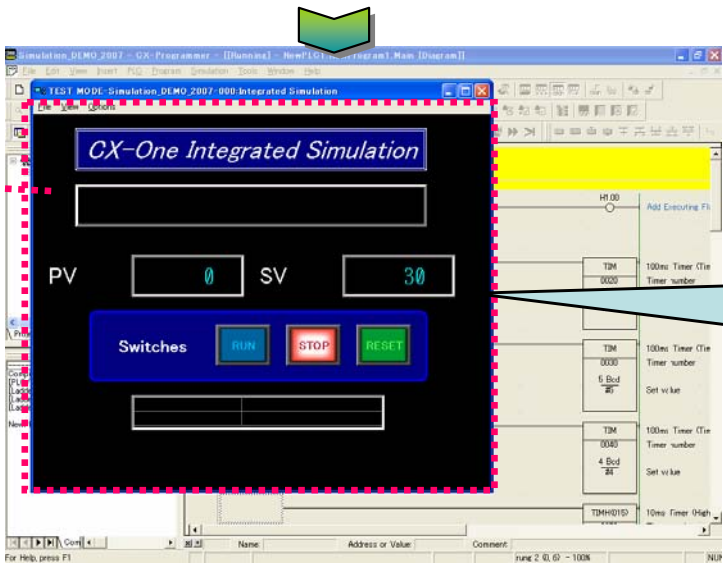
Can scale it to a desired size.

4.2. Always on Top

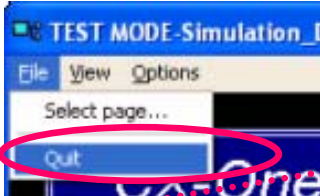Select [Option]-[Always on Top] on the menu of the "TEST MODE".

The test screen is always displayed to the front even if pressing the window of the **CX-Programmer**.

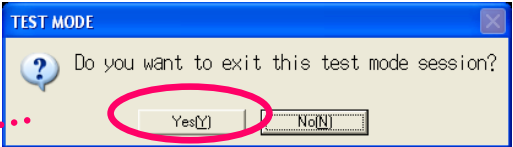The test screen is always displayed to the front and isn't hidden by other windows.

4.3. Saving a location and restarting it on the CX-Programmer

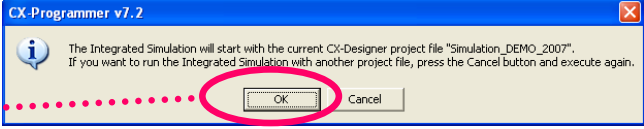Move "TEST MODE".

Select [File]-[Quit] on the menu of "TEST MODE".

Click [Yes] to close the test screen.

Do you want to exit this test mode session?

Start PLC-PT Integrated Simulation

Click an icon [PLC-PT Integrated Simulation] on the **CX-Programmer.**

Click [OK] on the message.

CX-Programmer v7.2

The Integrated Simulation will start with the current CX-Designer project file "Simulation_DEMO_2007".
If you want to run the Integrated Simulation with another project file, press the Cancel button and execute again.
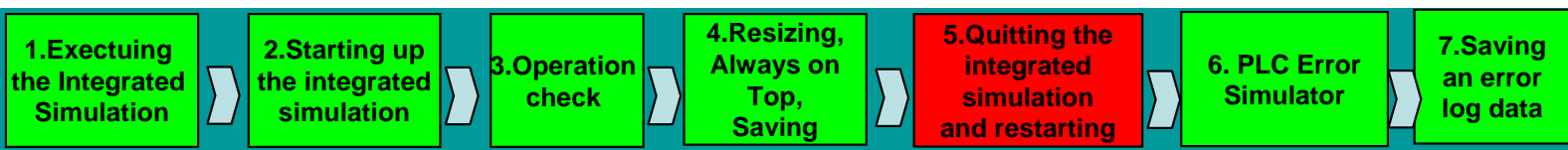
The integrated simulation is restarted. The test screen is displayed its location and screen size in status when quitting.

7
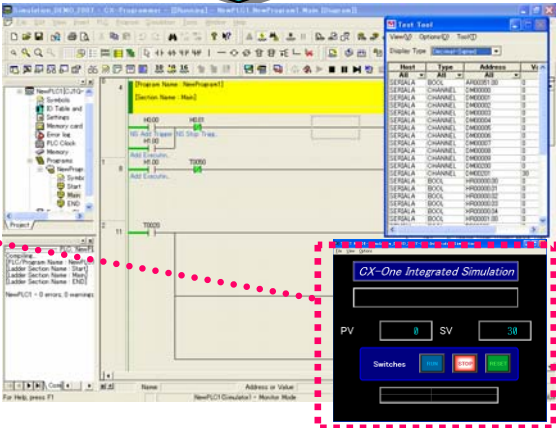
5. Quitting the Integrated Simulation and Restarting it on the CX-Designer

[Quitting the integrated simulation]-[Editing a screen]-[Restarting the integrated simulation with CX-Designer]
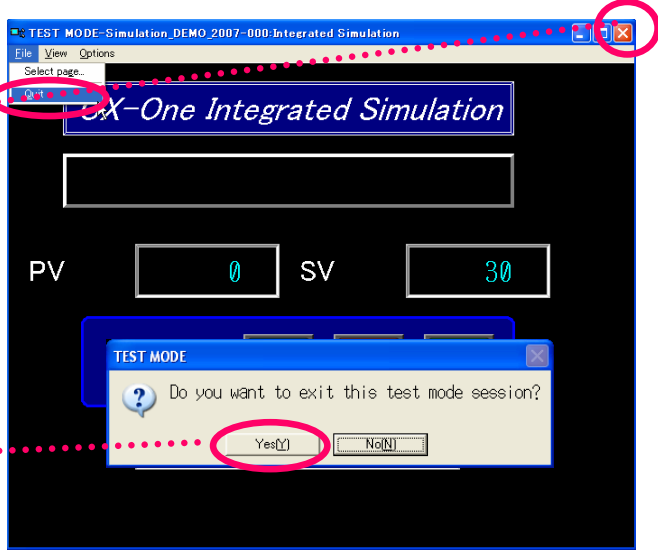
Use this when the edition of the screen data is occurred.
In this manual, you'll exit the screen and restart the integrated simulation.

5.1 Quitting the CX-Designer and Restarting

Click [x] on the upper-right corner of "TEST MODE" or select [File]-[Quit] on the test screen to exit "TEST MODE".
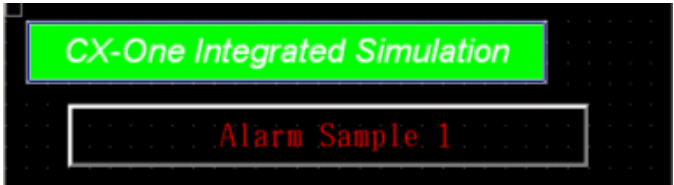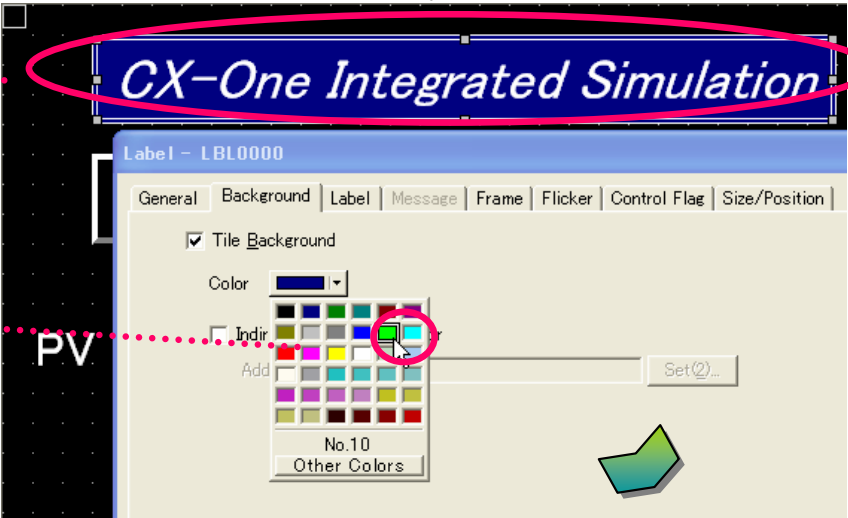
The message is displayed.

Click   Yes(Y)

5.2 Editing a Screen on the CX-Designer

"CX-Select the label background of "CX-One Integrated Simulation" with the **CX-Designer.**

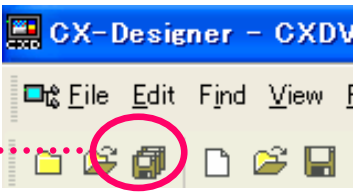**Select a object and double-click with the mouse**
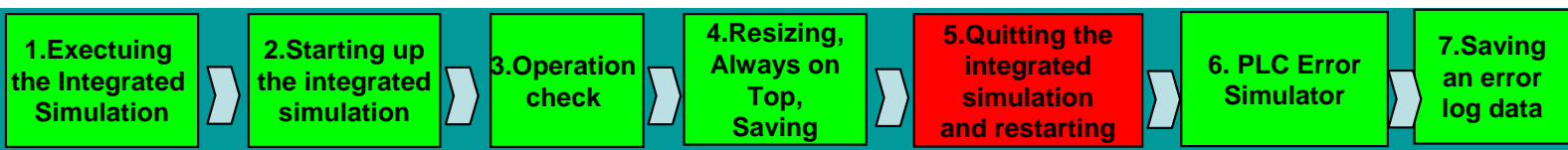
Select "green"

Click   OK

A background color of label will be changed to green.

5.3 Saving

Click an icon with the mouse with CX-Designer.

The screen edition has been completed.

8

5.4 Restarting up the Integrated Simulation
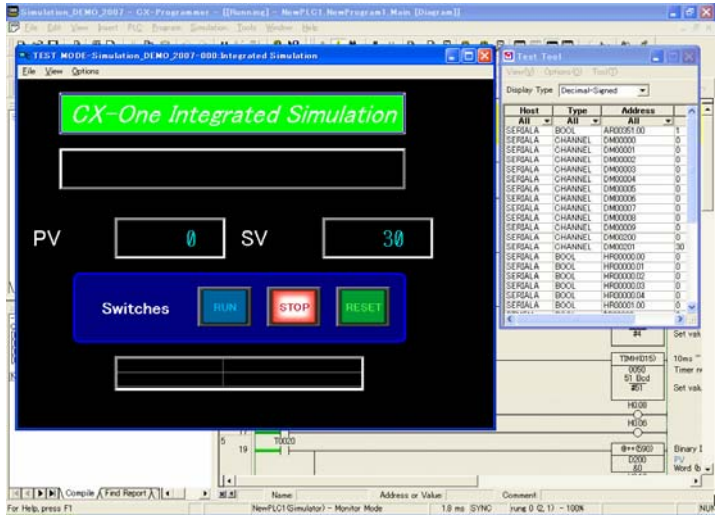
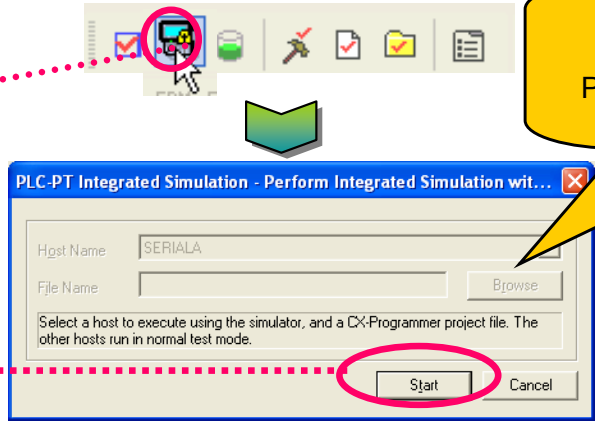**Execute the [Integrated Simulation] again.**

Restart up the integrated simulation

Left-click an icon with the mouse on the CX-Designer

Start up the integrated simulation.

Start

It's unnecessary to specify the ladder program because the CX-Programmer and the CX-Simulator have been already operating.

The screen edition is reflected and the [Integrated Simulation] can be easily restarted.

［**Note**］

**The [Integrated Simulation] can be easily restarted from either the CX-Programmer or the CX-Designer.**

9

6. PLC Error Simulation

The simulator can easily have PLC error occur and you will be able to confirm the operation of an error monitoring program on the computer.
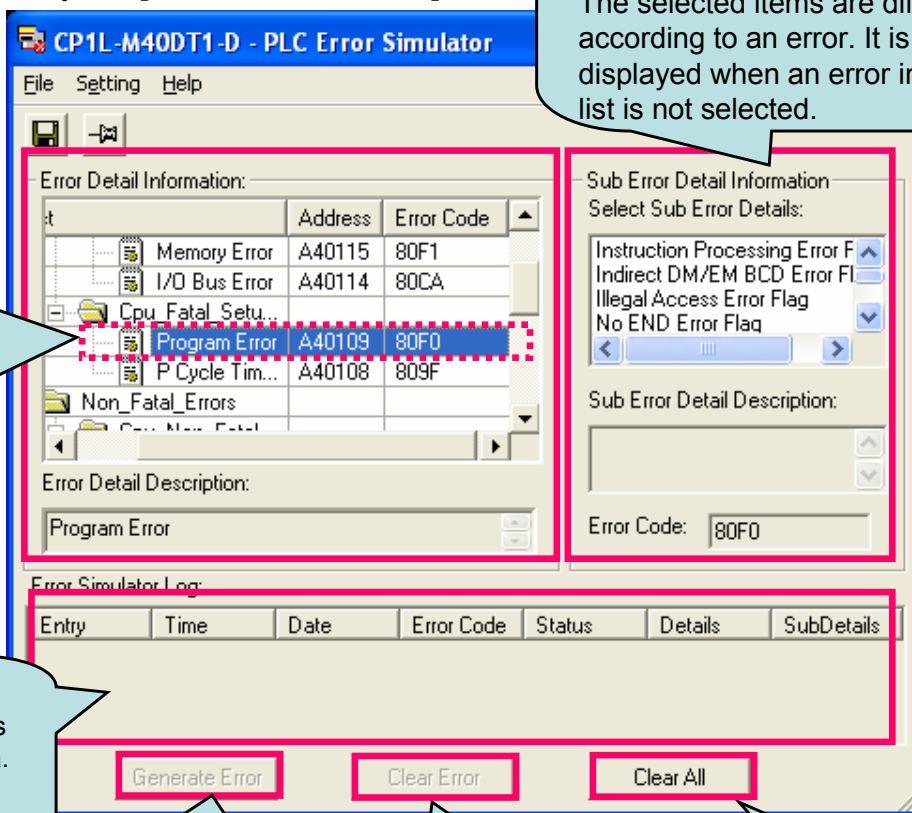
6.1 Starting up the PLC Error Simulator

Select [Simulation]-[PLC Error Simulator] on the menu of the **CX-Programmer**.
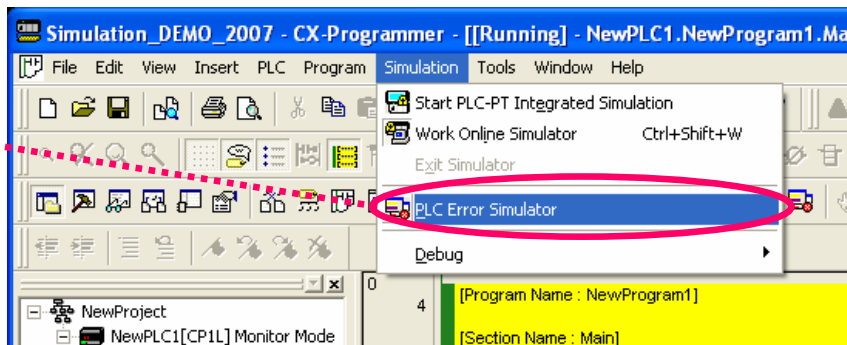
After starting up, select a flag in the error list. In this manual, select "Program Error".

Start up the [PLC Error Simulator]

Sub Error Detail Information
Set the required details of an error that was selected in the error list. The selected items are different according to an error. It is not displayed when an error in the error list is not selected.
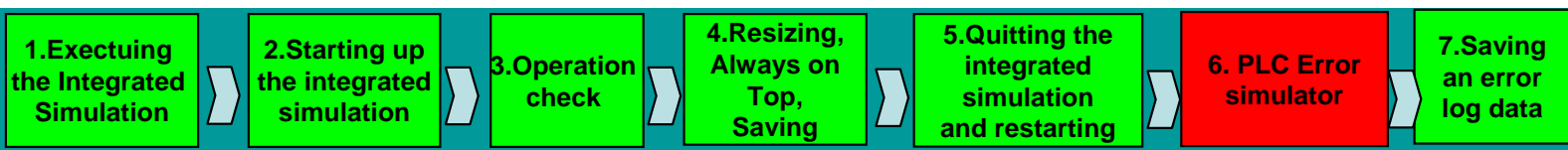
Error List
Classify "Cpu Fatal Errors" "Non Fatal Errors" in categories and display the list. Click an error that you want to occur.

Error Simulator Log
Display the information, such as the generated error and its data. Able to save it with the CSV file to write the test report.

[Generate Error] button
Display the information, such as the error that was occurred after selecting in the error list and its data. Able to save it with the CSV file to write the test report.

[Clear Error] button
Clear an error selected in the error list.

[Clear All] button
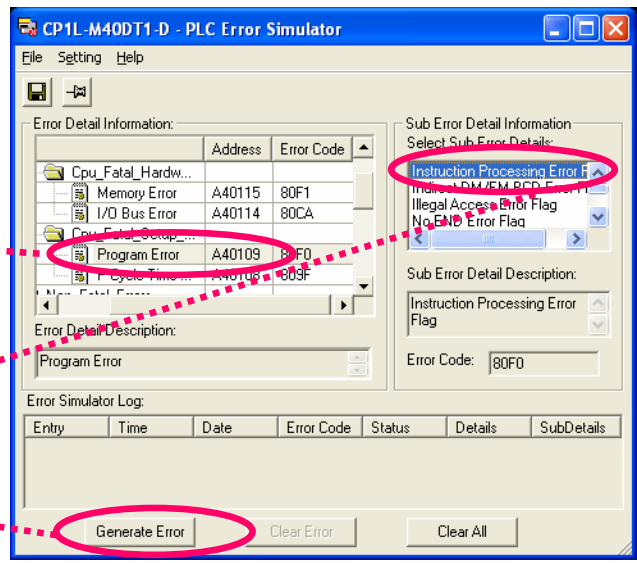Clear an error selected in the error list.
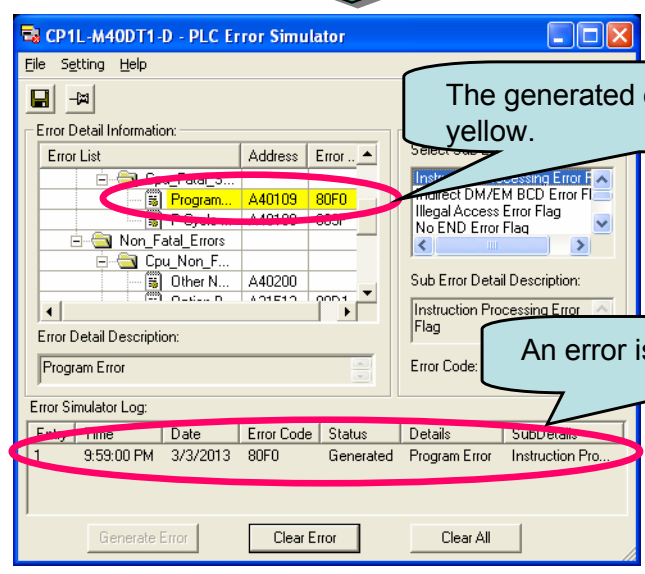
10

6.2. Generate Error (CPU Fatal Error)

Occur the [CPU Fatal Error] on the simulation, and confirm the status for the CX-Programmer and CX-Designer (TEST MODE).

Set as follow on the PLC Error Simulator.
・Error List:
Category:
Cpu_Fatal_Setup_Errors
Error: Program Error

・Sub Error Detail Information: Instruction Processing Error Flag

Press the [Generate Error] button.

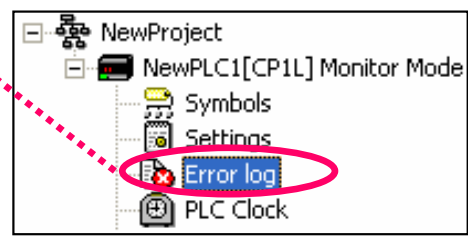**The [PLC Error] is occurred on the simulation.**

The generated error is turned to yellow.
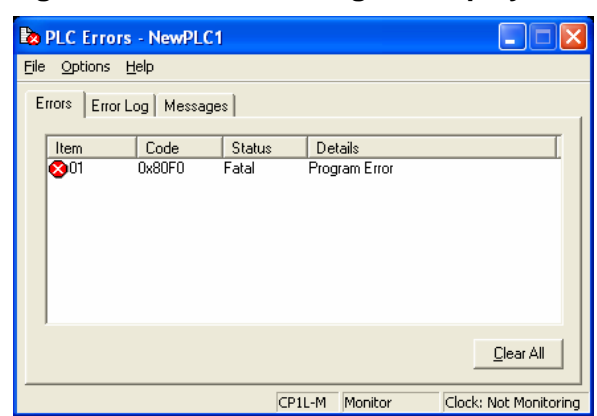
An error is displayed in the log.

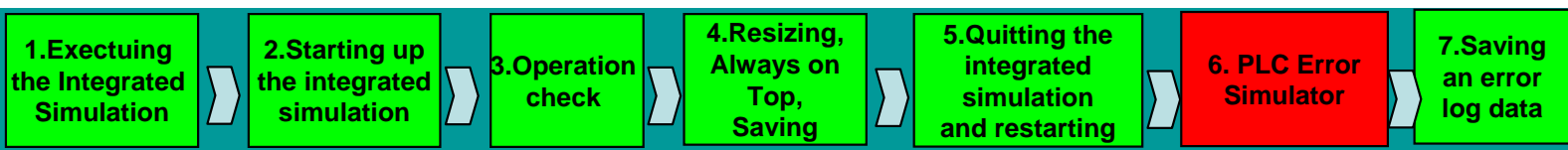**The error message will blink in the lower left-hand corner of the CX-Programmer.**

Error on NewPLC1. Check Error log.

Double-click [Error log] on the project work space of the CX-Programmer.

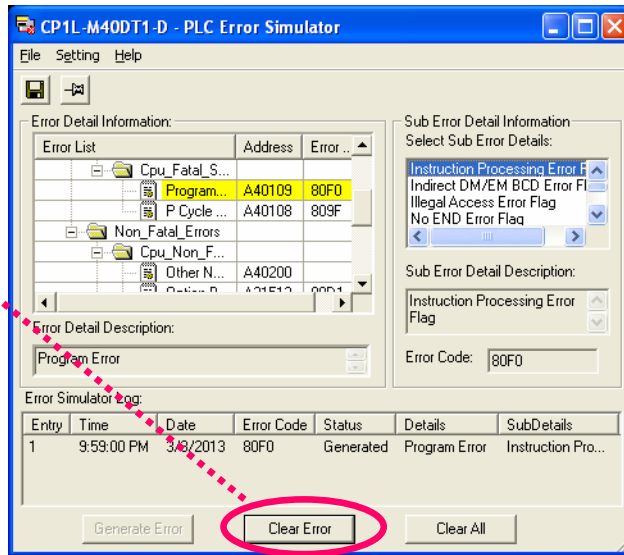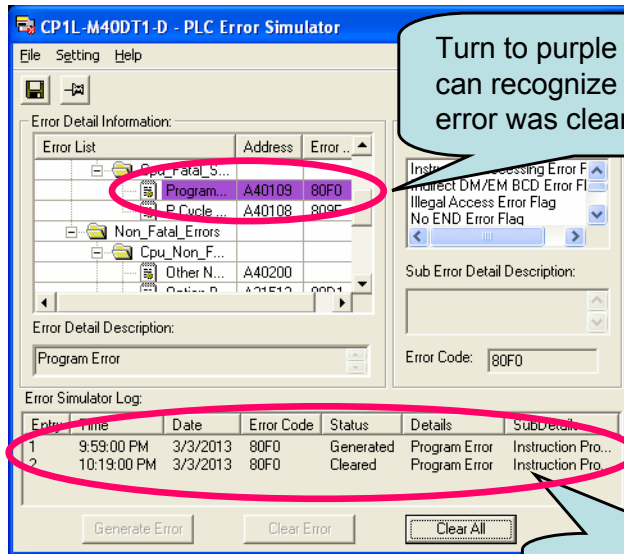**The generated error message is displayed.**

11

6.3.Clear Error

Clear the generated error after checking its simulation.

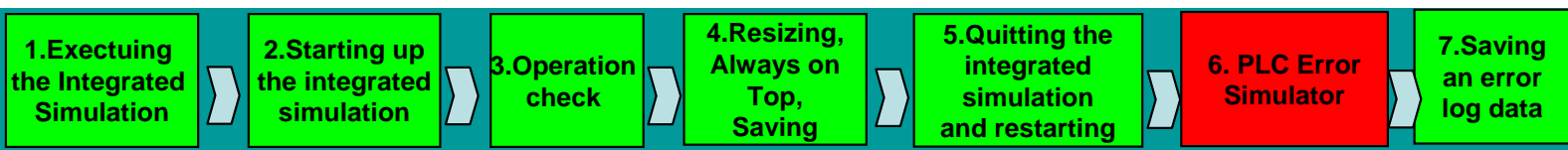Press the [Clear Error] button on the [PLC Error Simulator]

An error is cleared and the screen will be changed to the following display.

Turn to purple and you can recognize that an error was cleared.
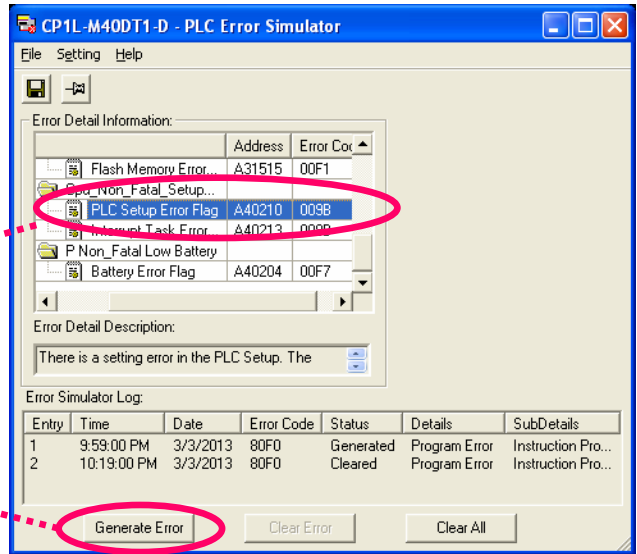
The [Clear Error] is registered in the log.
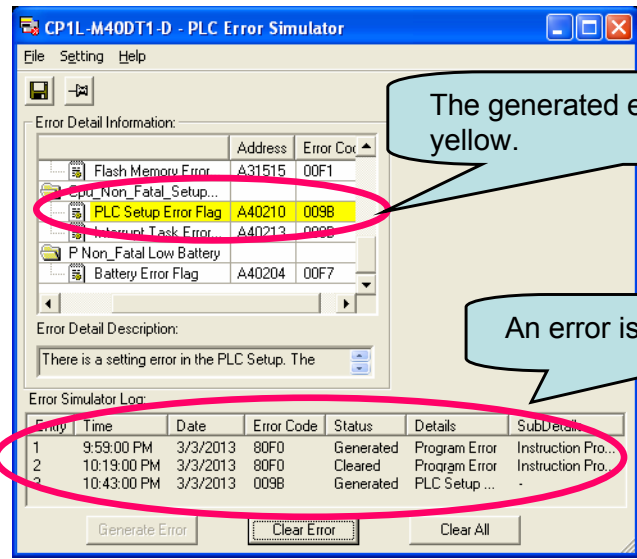
6.4.Generate Error (Non Fatal Error)

Occur the [Non Fatal Error] on the simulation, and confirm the status for the CX-Programmer, and CX-Designer (TEST MODE)

Set as follow on PLC Error Simulator.
・Error list:
Category:
Cpu_Non_Fatal_Setup_Errors
Error:
PLC Setup Error Flag

Press the [Generate Error] button.

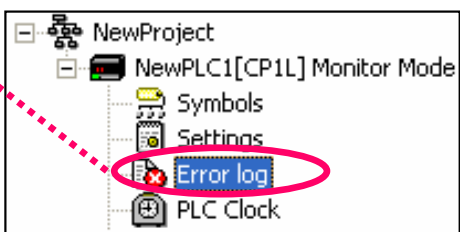**The [PLC error] is occurred on the simulation**

The generated error is turned to yellow.
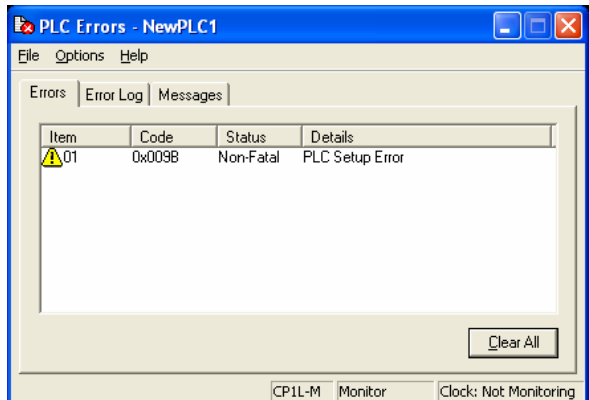
An error is displayed in the log.

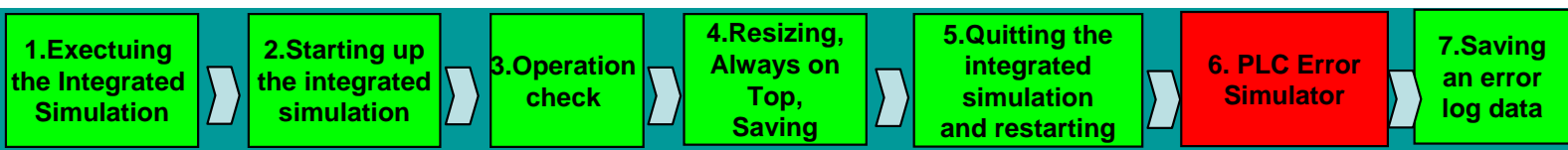**The error message will blink in the lower left-hand corner of the CX-Programmer.**

Error on NewPLC1. Check Error log.

Double-click [Error log] on the project work space of the CX-Programmer.
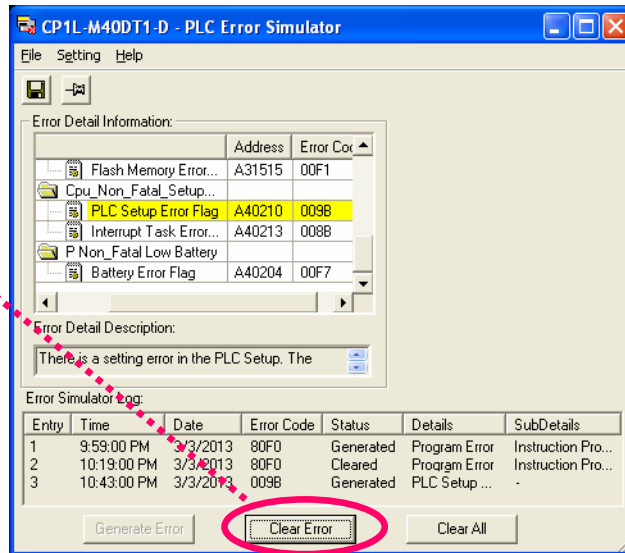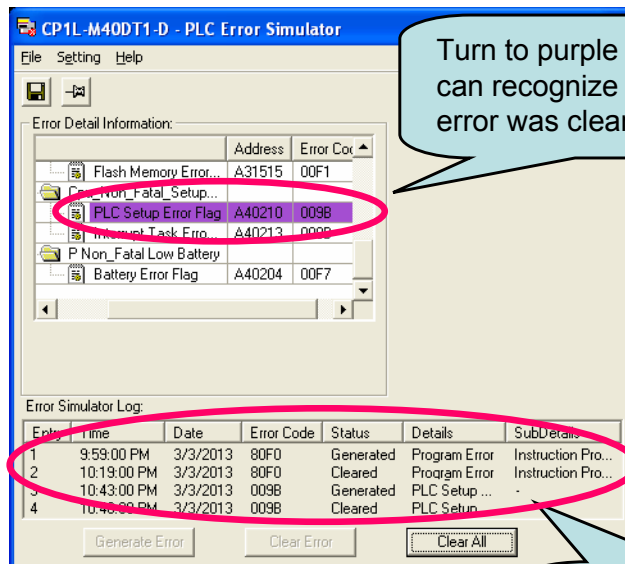
The generated error message is displayed.

13

6.5.Clear Error

Clear the generated error after checking its simulation.

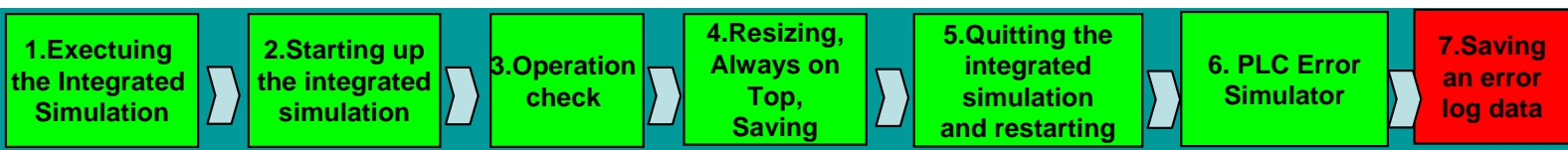Press the [Clear Error] button on the [PLC Error Simulator]

An error is cleared and the screen will be changed to the following display.

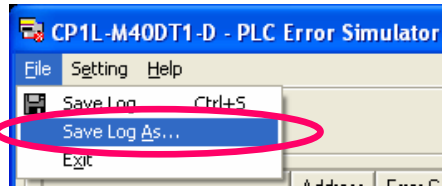Turn to purple and you can recognize that an error was cleared.

The [Clear Error] is registered in the log.

14

7. Saving an Error Log Data in the File.

Save the error information occurred in the past in CSV file for the validation result of error procedure. (This helps to prepare the text report.)

Select [File]-[Save Log As…] on PLC Error Simulator.

[Note]

Though the file name can be entered the first time, and after the second time it will be overwritten and saved.

Enter [ErrorSimulatorLog] on the "Save as" dialog and press the "Save" button.
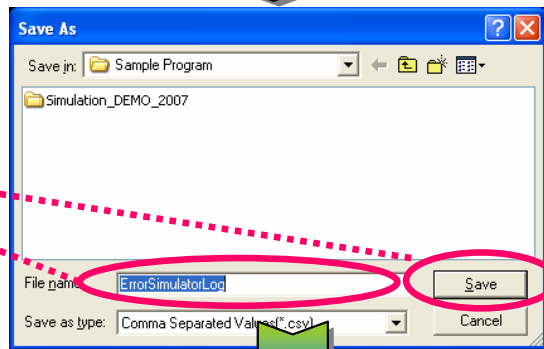
Save as [ErrorSimulatorLog.csv]

CSV

It's possible to check the error information (log list) occurred in the past on Excel.

Open the [ErrorSimulatorLog.csv] file on Microsoft Excel.

[Note]

You can also save the generated error logs in the following timing.

・When selecting [File]-[Exit] on the menu.

・When pressing the [Clear All] button.

That's All! Thanks you.

15

Note: Do not use this document to operate the Unit.

OMRON Corporation   Industrial Automation Company
  Tokyo, JAPAN

             Contact: www.ia.omron.com

Regional Headquarters
OMRON EUROPE B.V.
Wegalaan 67-69-2132 JD Hoofddorp
The Netherlands
Tel: (31)2356-81-300/Fax: (31)2356-81-388

OMRON ASIA PACIFIC PTE. LTD.
No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967
Tel: (65) 6835-3011/Fax: (65) 6835-2711

OMRON ELECTRONICS LLC
One Commerce Drive Schaumburg,
IL 60173-5302 U.S.A.
Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

OMRON (CHINA) CO., LTD.
Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China
Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

Authorized Distributor: