

# 4.0 Verifying Programs

Use the Verify command to help debug your ladder program. During the verification process, the Editor checks your program and notifies you of any errors that would prevent the program from running. If you choose, the Editor can report less serious issues, called warnings. See section 4.3 for more information. The error and warning messages also include information about the rung and grid location in which the error or warning occurred.

A program whose verify operation results in errors is not successfully verified and cannot be downloaded to a Processor and run. If only warnings result after a verify operation, the program is considered verified. Look at the bottom right corner of a program's status bar or in the Program Info tab (Program Properties) for the program's verification status, either Verified or Not Verified.

As the Editor verifies a program, it automatically compresses the rung to the left and up by deleting rows and columns that do not contain an instruction and minimizing wire lengths. Coils are moved out to the vertical page break if the Right-Justify Coils after Verify option is not selected. See section 3.7 for more information.

The Editor automatically verifies an online program when you choose to commit any online changes or place the program in Test Mode. Online program changes cannot be downloaded to a Processor and run until they are successfully verified.

Each program has its own Verify Output window that lists the error, warning, and status messages generated during the verify process. Because the Verify Output window is separate from the program window, you can easily switch between the program and the verify messages as you troubleshoot your program. The title of the Verify Output window is the name of the program appended by a .LOG extension. If you choose to verify the program again while the Verify Output window is open, the information in the window is overwritten. Within the Verify Output window, you can search for text and print the log file.

When offline programs are verified, the Editor does not check the Variable Configurator or create a verify log file unless you set the applicable options in the General tab of Tool Options. See sections 4.1 and 4.2 for more information.

### To verify a program

- Step 1. Make sure the program you want to verify is the active program.
- Step 2. From the Tools menu, choose Verify.

## 4.1 Creating a Verify Error Log File

Select the Generate Log File option in the General Options tab to create a log file on disk containing the same error, warning, and status messages as the Verify Output window. This file is stored in the same path as the program with the same name but with a .LOG extension. It can be opened and viewed using a text editor like WordPad®. The Editor generates a log file for each program by default.

### To create a verify log file

- Step 1. From the Tools menu, choose Options.
- Step 2. On the General tab, select the Generate Log File option in the Verify group box.
- Step 3. To accept the change, click OK or Apply.

### Tip

Deselecting this option prevents the Editor from generating the log file.

## 4.2 Automatically Checking the Variable Configurator Database While Verifying a Program

Select the Check Variable Configurator Database option in the General tab of Tools Options to automatically check the properties of a variable against the Variable Configurator database. When this option is selected, the Editor determines whether:

- global variables used in the program are declared in the Variable Configurator database
- global variables using Retained Value initialization are declared as non-volatile
- global timer and counter variables are non-volatile
- array variables used in the program have the same dimension as those defined in the Variable Configurator database

The Editor checks the Variable Configurator database by default.

### To automatically check the Variable Configurator database while verifying a program

- Step 1. From the Tools menu, choose Options.
- Step 2. On the General tab, select the Check Variable Configurator Database option in the Verify group box.
- Step 3. To accept the change, click OK or Apply.

### Tip

Deselecting this option prevents the Editor from checking the Variable Configurator database. This makes verifying a program faster. However, you cannot install and run a program that contains global variables that are not defined in the Variable Configurator database.

## 4.3 Specifying Whether To Include Warning Messages When Verifying Programs

Select the Ignore Warnings option in the General tab options from the Tools menu to prevent verify warnings from being displayed in the Verify Output window and verify log file (if the log file is generated). Verify error messages are always displayed in the output window and log file. By default, the Editor includes verify warning messages in the output window and log file of offline programs that you verify. The Editor does not include warning messages arising from committing online changes or placing the program in Test Mode.

### To prevent warning messages from displaying in the verify log file

- Step 1. From the Tools menu, choose Options.
- Step 2. On the General tab, deselect the Ignore Warnings option in the Verify group box.
- Step 3. To accept the change, click OK or Apply.

## 4.4 Resolving Verify Errors

The Verify Output window lists error messages and, if you choose, warning messages that help you debug a program. Error messages also include the rung number and grid location of the logic in which the verify error occurred. For example,

This error:

*In Rung #8 at location {4,1}*

*Variables of type Timer or Counter cannot be used on a coil.*

Means:

The coil located in the **fourth column** of the **first row** in **rung 8** has a timer or counter associated with it.

Because the Verify Output window is separate from the program window, you can easily switch between the program and the verify messages as you troubleshoot your program.

### Tip

To switch between the two windows, press CTRL+F6