CompactLogix5320 and CompactLogix5330 Controllers

(Cat. No. 1769-L20 and 1769-L30)

This release note corresponds to major revision 10, minor revision 13 of the CompactLogix controller firmware. Use this firmware release with:

Software Product:	Compatible Version:
RSLogix 5000 programming software	10.00
RSLinx software	2.30.00 (with Service pack 1)
RSNetWorx for ControlNet software	3.21
RSNetWorx for DeviceNet software	3.21

This release note covers corrected anomalies, restrictions, nonvolatile memory enhancements, common logix enhancements, and provides a procedure for the required installation of EDS and ICON files for version 10 CompactLogix controllers.

Controller Memory Considerations

This revision requires more memory than previous revisions. Before you upgrade to this revision, check the amount of unused memory that you have in the controller.

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Corrected Anomalies

This revision of ControlLogix controllers (ControlLogix5550, ControlLogix5553, ControlLogix5555, and ControlLogix5563) corrects the following anomalies:

- If you deleted an unused tag while online, either of the following failures might have occurred:
  - You were unable to communicate with the controller. RSLinx showed a red X over the controller and you were unable to communicate with the controller through either the serial port or another communication module.
  - The controller may have become inoperative. (The OK LED of the controller turned solid red.)

  The failure could have occurred immediately after you deleted the tag or later on in the execution of the project. A power cycle would temporarily clear the problem.

- In previous revisions of the controller, when using RSLogix 5000 software to enable, disable, or remove input forces, the other inputs (the ones not being forced) associated *with that connection* might have gone to zero. The modified inputs stayed at zero for approximately 1 RPI and then returned to their proper state. If the connection was a module connection, all inputs from that module might have gone to zero. If the connection was a rack connection, all inputs from that rack might have gone to zero.

Hold Last State and User-Defined Safe State Not Supported

The CompactLogix5320 and CompactLogix5330 controllers do not support Hold Last State or User-Defined Safe State features.

- If an I/O module fails such that its communication to the controller is lost, or if any module is disconnected from the system bus while under power, the controller will go into the fault mode. All outputs turn off when the system bus or any module faults.

- When creating 1769 output modules, module-defined tags are automatically created for each module. These module-defined tags include configuration (C) data type members to enable alternate outputs, but these members are non-functional and should not be programmed. CompactLogix5320 and CompactLogix5330 controllers do not support these alternate outputs, as listed below:

For digital output modules:	For analog output modules:
• ProgToFaultEn • ProgMode • ProgValue • FaultMode • FaultValue	• CH*x*ProgToFaultEn • CH*x*ProgMode • CH*x*FaultMode where CHx = the channel number

DH-485 Communications

We recommend that you use DH-485 communications as follows:

- If you update the firmware of a controller while it is connected to a DH-485 network, communication on the network may stop. To prevent this, disconnect the controller from the DH-485 network *before* you update the firmware of the controller.

- Logix5000 controllers should be used on DH-485 networks only when you wish to add these controllers to an existing DH-485 network. For new applications with Logix5000 controllers, DeviceNet, Ethernet, and ControlNet are the recommended networks.

- While your system is running, use a DH-485 network to send messages between devices (e.g., controllers, PanelView terminals).

- To use RSLogix 5000 software over a DH-485 network, (upload, download, monitor, edit online), place all controllers in the program mode. Excessive traffic on the DH-485 network may make it impractical to connect and use RSLogix 5000 programming software while your system is running.

Support for Nonvolatile Memory

The 1769-L20 and 1769-L30 CompactLogix controllers now support 64K bytes of nonvolatile memory for storing the project that is running in the controller. Nonvolatile memory stores the contents of user memory to EEPROM. In the event of a power surge, brown-out, or other corruption of user memory, the project is held in nonvolatile EEPROM. When the controller is re-started, the contents of the EEPROM can be transferred to user memory and the controller can be up and running again quickly, without the need to download the project from a PC.

NOTE: Once you update the firmware of the CompactLogix controller to this revision, *future* updates automatically clear the project that is in nonvolatile memory. This lets you update the controller even if the project in nonvolatile memory is set to either of the following load image options:

- On Power Up
- On Corrupt Memory

For details on storing to nonvolatile memory or restoring from nonvolatile memory, see the *Logix5000 Controllers Common Procedures Programming Manual*, publication 1756-PM001D-EN-P.

IMPORTANT Nonvolatile memory stores the contents of user memory at the time that you store the project.

- Changes that you make after you store the project are not reflected in nonvolatile memory.
- If you want to store changes such as online edits or tag values, store the project again after you make changes.
- After you load or store to or from nonvolatile memory, RSLogix 5000 software goes offline from the controller.

Common Logix Enhancements

This revision of FlexLogix controllers contains these new features, which are common to all the Logix controllers:

Enhancement:	Description:
new instructions	SWPB Rearrange the bytes of a value LOWER Convert the alphabetical characters in a string to lower case UPPER Convert the alphabetical characters in a string to upper case
expanded MESSAGE structure	The MESSAGE structure, which controls the execution of MSG instructions, contains new members. The new members let you use logic to change these properties of a message during run time, including: • path • channel, rack, group, and slot • source link, destination link, and destination node • address of the data in the destination device • properties of a CIP generic message • timeout values • local and remote index (See "wildcard in the Source and/or Destination of a MSG.")
wildcard in the Source and/or Destination of a MSG	The MSG instruction lets you use logic to control the starting element number of the Source and/or Destination array: • The instruction accepts an asterisk [*] in place of the element number in the Source and Destination arrays. For two and three dimension arrays, you can use an asterisk for only one of the dimensions. • A corresponding index member stores the actual value to be used in place of the asterisk [*]. You can use different values for the Source and Destination. • To change the element number, change the value of the index.
block transfers over ControlNet	The MSG instruction now performs block transfers over a ControlNet network. This lets you access modules over this network that require block transfers, such as 1771 analog I/O modules.
additional data types for SLC messages	The MSG instruction lets you exchange 32-bit data with SLC or MicroLogix controllers: **For this controller: and this data type: use the Logix data type:** SLC 500 F REAL MicroLogix 1000, 1200, and 1500 F REAL MicroLogix 1200 and 1500 L DINT
pre-configured CIP generic MSG	In the Message Properties dialog box, a list of CIP messages lets you select a common function for a CIP message. The selection automatically fills in many of the properties for the message.
reconfigure an I/O module	A new message type, Module Reconfigure, lets you send new configuration information to an I/O module. During the reconfiguration: • Input modules continue to send input data to the controller. • Output modules continue to control their output devices. This lets you change configuration properties such as set points and alarm values without experiencing a bump.

Enhancement:	Description:
string data types in CMP and FSC expressions	The CMP and FSC instructions let you use string data types in the expression to compare two strings. For example, the FSC instruction lets you search an array of strings for a specific string of characters.
JSR/SBR/RET instructions	Enhancements to the JSR/SBR/RET instructions let you: • use these instructions in function block routines • use the BOOL data type as an input and return parameter
update firmware as part of the download	When you download a project, you have the option of updating the firmware of the controller as part of the download sequence. To use this feature, first install a firmware upgrade kit.

Installing CompactLogix EDS and ICON Files

If you have a version 10 CompactLogix controller, you must install EDS and ICON files for these controllers in RSLinx to properly communicate with them. If you do not install these files, the CompactLogix controllers will be "Unrecognized Devices" in the Who Active screens in RSLinx and RSLogix 5000. The following is a simple step-by-step procedure for installing these EDS and ICON files.

The EDS and ICON Files are located on the RSLogix 5000 Previous Versions and Firmware Kits CD-ROM, part number 9324-FSCD, dated 11.30.01.

1. If RSLinx is running, close it.

2. Place the RSLogix 5000 Previous Versions and Firmware Kits CD-ROM into the CD drive of your computer.

3. Access the EDS Hardware Installation Tool from the Start menu, following this path: Start—Programs—Rockwell Software—RSLinx-EDS Hardware Installation Tool.

4. The first screen in the tool gives you the options to Add, Remove, or Remove All. Click on Add.

5. Then from the next screen, click on "Register a directory of EDS files". Browse for the following folder on you RSLogix 5000 Previous Versions and Firmware Kits CD-ROM: Firmware Kits—V10.00.00—EDS Files

6. Click Next.

7. The Installation Test Results screen displays, showing a check mark next to each of the EDS files.

8. Click Next.

9. The ICONs are displayed. Click Next.

10. The next screen asks if you would like to register the EDS files shown. Click Next.

11. The EDS and ICON file installation begins. A screen will notify you when installation is complete. Click Finish.

12. From the next screen, click Exit.

You have completed the installation of the files necessary to communicate with your version 10 CompactLogix controllers.

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