Allen-Bradley

1769 CompactLogix Controllers, Revision 20

Catalog Numbers 1769-L31, 1769-L32C, 1769-L32E, 1769-L35CR, 1769-L35E

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IMPORTANT

Consider the following before upgrading the firmware on your Logix5000™ controller:

- Before updating your controller, we strongly recommend that you review information pertinent to previous major firmware revisions. For example, when updating from revision 17.*x* to 20.*x*, view information in the following publications:
  - CompactLogix™ Controllers, Revision 18 Release Notes, publication 1769-RN018
  - CompactLogix Controllers, Revision 19 Release Notes, publication 1769-RN019

  Firmware release notes contain material for all minor revisions subsequent to each major revision. If your controller, for example, is at revision 17.11, and not the last minor revision, 19.11, you should view all of the information for revisions 17.11...19.11 before updating to revision 20.*x*.

  Release notes are available at http://www.rockwellautomation.com/literature.
- After upgrading the firmware on your module, we strongly recommend that you **retest and/or validate your application offline before going online.**

About This Publication

This publication describes enhancements and anomalies (known and corrected) for 1769-L3*x* CompactLogix controllers, firmware revisions 20.011...20.013.

Information that has been added or changed since the last revision of this publication is indicated by a change bar as shown to the side of this paragraph. In addition to information specific to the most recent firmware revision, the information from previous minor revisions is retained in these release notes.

We strongly recommend that you review the information provided regarding previous firmware revisions. We recommend that you do so because, if you are upgrading your firmware through multiple previous revisions, all of the information specific to all of the revisions is applicable.

For example, if you need to upgrade your 1769-L31 controller from revision 20.011...20.013, all of the information specific to revisions 20.011...20.013 is applicable.

About Publication 1769-RN021C-EN-P

This revision of the firmware release notes, 1769-RN021C, provides updated information specific to firmware revision 20.013 for all CompactLogix L3*x* controllers. The controllers and catalog numbers included in firmware revision 20.013 are listed in this table.

Table 1 - Controllers and Firmware Revisions Identified in Publication 1769-RN021C

Cat. No.	Major and Minor Revision No.
1769-L31	20.013
1769-L32C	
1769-L32E	
1769-L35CR	
1769-L35E	

About Publication 1769-RN021B-EN-P

This revision of the firmware release notes, 1769-RN021B, provides updated information specific to firmware revision 20.012 for all CompactLogix L3*x* controllers. The controllers and catalog numbers included in firmware revision 20.012 are listed in this table.

Table 2 - Controllers and Firmware Revisions Identified in Publication 1769-RN021B

Cat. No.	Major and Minor Revision No.
1769-L31	20.012
1769-L32C	
1769-L32E	
1769-L35CR	
1769-L35E	

About Publication 1769-RN021A-EN-P

This revision of the firmware release notes, 1769-RN021**A**, provides updated information specific to firmware revision 20.011 for all CompactLogix L3*x* controllers. The controllers and catalog numbers included in firmware revision 20.011 are listed in this table.

Table 3 - Controllers and Firmware Revisions Identified in Publication 1769-RN021A

Cat. No.	Major and Minor Revision No.
1769-L31	20.011
1769-L32C	
1769-L32E	
1769-L35CR	
1769-L35E	

Compatible Software Versions

To use firmware revision 20.013, these minimum software versions are required.

Table 4 - Compatible Software Versions

Software	Required Software Version, Min
Compare Tool	3.20.02
ControlFLASH™	11.00.00
FactoryTalk® AssetCentre	4.00.00 (CPR 9, SR3)
FactoryTalk Services Platform	2.50.00 (CPR 9, SR5)
FactoryTalk Activation	3.50.00 (CPR 9, SR5)
RSLinx® Classic	2.59.01 (CPR 9, SR5)

Table 4 - Compatible Software Versions (continued)

Software	Required Software Version, Min
RSLinx Enterprise	5.50.04 (CPR 9, SR5)
RSLogix™ 5000	20.01.00 (CPR 9, SR5)
RSNetWorx™ for ControlNet	11.00.00 (CPR 9, SR5)
RSNetWorx for DeviceNet	
RSNetWorx for EtherNet/IP	

For system requirements, go to http://www.rockwellautomation.com/rockwellsoftware/design/rslogix5000/sysreq.html.

Before You Begin

Before you upgrade your firmware, consider the following.

IMPORTANT Loss of communication or power during a controller firmware upgrade may result in the controller rejecting the new firmware. If the controller firmware upgrade fails due to the conditions described, these corrective actions may be required:

- Cycle controller power and successfully complete the upgrade.
- If a nonrecoverable fault occurs, then return the controller for factory repair.

These preliminary actions are required before upgrading your controller firmware.

Table 5 - Before You Begin

If	Then
Your controller is close to its limits of memory	This revision may require more memory than previous revisions: • To see what components of your current project require more memory, see page 14. • RSLogix 5000 programming software, version 13.0 or later, lets you estimate the memory requirements of the controller offline. To update to this revision, you may need to use a controller with a larger amount of memory.
Your controller is connected to a DH-485 network	Disconnect it from the DH-485 network before you update the firmware of the controller. If you update the firmware of a controller while it is connected to a DH-485 network, communication on the network may stop.

Table 5 - Before You Begin (continued)

If	Then
Important: This applies only to 1769-L32E and 1769-L35E controllers You are upgrading a 1769-L32E or 1769-L35E CompactLogix controller	Before upgrading, we recommend you complete the following tasks before attempting to upgrade controller firmware from revision 16 or earlier to revision 20: • First, check the status of the MS (module status) status indicator next to the Ethernet port. If it is flashing red before you begin the upgrade, additional action may be required. Contact Rockwell Automation Technical Support for more information. • Modify the Port Configuration for the Ethernet card so that the Network Configuration Type is set to Static and assign a valid IP address. • If RSWho is actively browsing the controller through an Ethernet or serial connection, close the RSWho window to stop the browse. • If other controllers are messaging to the 1769-L32E or 1769-L35E controller, take the other controllers off the network or put them in Program mode. • If there are controllers consuming tags from the 1769-L32E or 1769-L35E controller, remove them from the network. • If there are HMI devices connected to the controller, disconnect them from the network or shut them down. **IMPORTANT** If you cannot perform the tasks listed above before attempting a controller firmware upgrade, Ethernet traffic on the controller's Ethernet port may cause the ControlFLASH utility to time out during the firmware upgrade. If the timeout is not handled properly, you may render the Ethernet port on the controller inoperable, requiring you to return the controller to Rockwell Automation for repair. In the event that a ControlFLASH timeout occurs, the software displays an error dialog box indicating that the 'Target Device failed to report the new revision number', or that the upgrade 'Failed to begin update to the target device'. If those error dialog boxes display, check the MS status indicator. If the indicator is flashing red, the upgrade is still in progress and should not be interrupted. Do not cycle power to the controller while the status indicator is flashing red. If the upgrade completes, the controller power cycles itself and indicates the upgrade is complete with a solid green MS status indicator. The time required to complete the upgrade is dependent on the level of Ethernet traffic. If the controller does not complete the upgrade, the MS status indicator continues flashing red. In this case, contact Rockwell Automation Services and Support.

Enhancements

These enhancements are available when you use firmware revisions 20.011or later with RSLogix 5000 programming software, version 20.00.00 or later.

Table 6 - Enhancements with Firmware Revisions 20.011 or Later

Cat. No.	Description
1769-L31 1769-L32C 1769-L32E 1769-L35CR 1769-L35E	Security To enhance system and device-level security in systems that use our products, Rockwell Automation prescribes validated, defense-in-depth measures and design practices to enhance system and device-level security. For the latest information on security solutions and enhancements, visit http://www.rockwellautomation.com/solutions/security.
	Automatic Device Configuration for Drives This feature supports the automatic device replacement functionality for drives. This makes it easier to perform quick, efficient drive replacement without requiring any laptop, software, or user intervention aside from wiring in the new drive and setting a network address. Previously, device configuration data for PowerFlex® drives was kept in the ACD file and had to be manually managed via the AOP of the device. Now, when a module is replaced, the controller will automatically send it to the configuration data. Always supported by Sercos and CIP motion drives. Version 20 extends ADC support to the PowerFlex 755 drives.
	Electronic Data Sheet AOP This feature allows select devices that have properly configured EDS sheets to integrate directly with Logix without the need for a device profile. This improves the flexibility of the Integrated Architecture™ by providing a richer integrated experience to more devices.
	Finding/Adding Devices to the Logix Tree Enhancements to the Select Module dialog box make it easier to use and find devices. The Select Module dialog box now shows all registered devices. It also includes new string and category filters, a wildcard search, and a favorites list.
	Security Authority Binding By checking the Require Matching Security Authority ID for Authentication and Authorization checkbox, you can bind the project file to a specific instance of the FactoryTalk Security directory. This lets you to verify the identity of the FactoryTalk Security directory that was used to authenticate and authorize users of a secured project file or secured controller. Once this is assigned, the project file or the controller containing the project file cannot be accessed by any users unless they are authenticated by this specific FactoryTalk Security directory. For more information, see the FactoryTalk Security System Configuration Guide, publication FTSEC-QS001.
	Change Detection When online with a controller, a 64-bit integer is displayed in the Audit Value dialog box. This Audit Value changes every time an event listed in the Changes To Detect configuration dialog box occurs. By inspecting this value, you can quickly determine if the behavior of a controller has been modified since the last time it was inspected. The Change Detection Audit Value is also exposed as a predefined tag by RSLinx Enterprise software for use in HMI displays or other applications. Additionally, it is included in every entry of the Controller Log. For more information, see the CompactLogix Controllers User Manual, publication 1769-UM011.

Corrected Anomalies

These anomalies have been corrected with these firmware revisions:

- Corrected Anomalies with Firmware Revision 20.013 on page 7
- Corrected Anomalies with Firmware Revision 20.012 on page 7
- Corrected Anomalies with Firmware Revision 20.011 on page 8

These anomalies have been corrected with firmware revision 20.013.

Table 7 - Corrected Anomalies with Firmware Revision 20.013

Cat. No.	Description
1769-L31 1769-L32C 1769-L32E 1769-L35CR 1769-L35E	**CORRECTED:** When using the IOT (Immediate Output) instruction with CompactLogix controllers, data integrity anomalies on the 1769 CompactBus can occur. When using the IOT instruction, there is the potential that data integrity anomalies will be seen. These data integrity anomalies will occur for one RPI. For example, when an IOT instruction is used on an output module, such as a 1769-OB16 module, which is wired to an input module, such as a 1769-IQ16 module, the values read through the input module may not match the ones sent by the output module. Lgx00133423, Lgx00133621, Lgx00132827
	CORRECTED: Your controller might experience an anomaly when browsing the 1769 CompactBus or through a 1769-SDN on the 1769 CompactBus. Signs of the anomaly are as follows. • Browsing of the DeviceNet network will not occur. • Browsing of the local 1769 CompactBus will not occur. • Messages targeted to I/O modules on the local 1769 CompactBus will continuously error. • Messages to devices on DeviceNet will continuously error. Once the controller has entered this state, the only way to correct the anomalous behavior is to do the following. 1. Power down the controller. 2. Remove the battery. 3. Let the controller set for approximately five minutes. 4. Reconnect the battery. 5. Redownload the application. Lgx00117103, Lgx00129067, Lgx00135478
	CORRECTED: When using PowerFlex 750 series drives with firmware that supports Drives ADC (Automatic Drive Configuration) on power up, the controller may become stuck in the transition to Run mode. When stuck in the transition to Run mode, the application is not executing and the outputs are not being updated. For more information, refer to Knowledgebase document 493802. Lgx00135067, Lgx00130112

These anomalies have been corrected with firmware revision 20.012.

Table 8 - Corrected Anomalies with Firmware Revision 20.012

Cat. No.	Description
1769-L31 1769-L32C 1769-L32E 1769-L35CR 1769-L35E	**CORRECTED:** When inhibiting any connection that contains output data on the local CompactBus, under certain timing conditions, the outputs can stay on, even though the connection is inhibited. Lgx00126406, Lgx00127937
	CORRECTED: Safe State Values out does not work for 1794-IE4X0E2, 1794-OE12, and 1794-OE8H modules. **Important:** This is an RSLogix 5000 software anomaly that requires version 20.01.00 software for the correction (PSA 2012-2-006). Lgx00126967, Lgx00126968, Lgx00127022

These anomalies have been corrected with firmware revision 20.011.

Table 9 - Corrected Anomalies with Firmware Revision 20.011

Cat. No.	Description
1769-L31 1769-L32C 1769-L32E 1769-L35CR 1769-L35E	**CORRECTED:** Unsuccessful MSG execution results in subsequent unsuccessful messages in master/slave controller configurations. When a DF-1 serial connection is used between a master and slave controller, a MSG instruction is not successfully executed and an in-polling sequence error occurs if the master station address is not listed in the poll node list. However, with this anomaly, after the in-polling sequence error, subsequent MSG instructions are also unsuccessful. To work around this anomaly, change the master controller's station address to a different value or re-execute the unsuccessful MSG instruction in Master Transmit mode and use the Between Station Polls parameter. Lgx00083882, Lgx00082610
	CORRECTED: When using Add-On Instructions, if you use the same backing/reference tag for multiple Add-On Instructions that are in different tasks, the controller may experience a major non-recoverable (MNRF) fault. For example, you have an Add-On Instruction called Motor_Start that is used twice in the application, once in Periodic Task 1 and once in Periodic Task 2, in both cases the Motor_Start uses the same backing/reference tag Pump_Motor_Start. The following events may occur when the program is executing: 1. Periodic Task 1 is executing and the Motor_Start is being scanned. 2. Periodic Task 2 preempts Periodic Task 1. 3. Periodic Task 2 runs and the Motor_Start is executed. 4. Periodic Task 1 is allowed to again execute and completes scanning of the Motor_Start. 5. Upon completion of scanning Motor_Start the controller can MNRF. The MNRF occurs if one instance of the Motor_Start scans false and the other scans true. To work around this anomaly, use individual backing/reference tag for all Add-On Instructions. Lgx00122436, Lgx00113448
	CORRECTED: When you perform a Partial Import Online (PIO) of a function block routine that contains S-Curve function blocks across Logix platforms, set the .Initialize bit in the backing tag control structure of all S-Curve instructions. This configuration causes the S-Curve instructions to re-initialize themselves. Failure to set the .Initialize bit in the backing tag control structure of all S-Curve instructions, may cause the S-Curve function block to execute with uninitialized values. Lgx00114927, Lgx00114935
	CORRECTED: Connection timeout events between the embedded NetLinx module and the Controller were not handled correctly. When this occurred, connection resources and memory resources related to RSLinx optimized communication packets were not released. This resulted in the controller running out of connection and memory resources over time. Lgx00115841, Lgx00112976
	CORRECTED: The controller will not log a minor fault Type 6 (Task Overlap), Code 4 (VA Task) when the RPI(s) for 1769 I/O modules are set incorrectly, that is too fast. Lgx00118179, Lgx00117865

Table 9 - Corrected Anomalies with Firmware Revision 20.011 (continued)

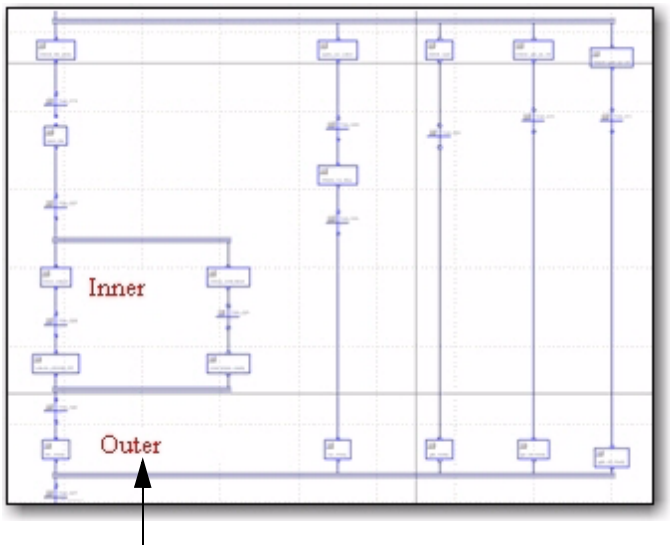
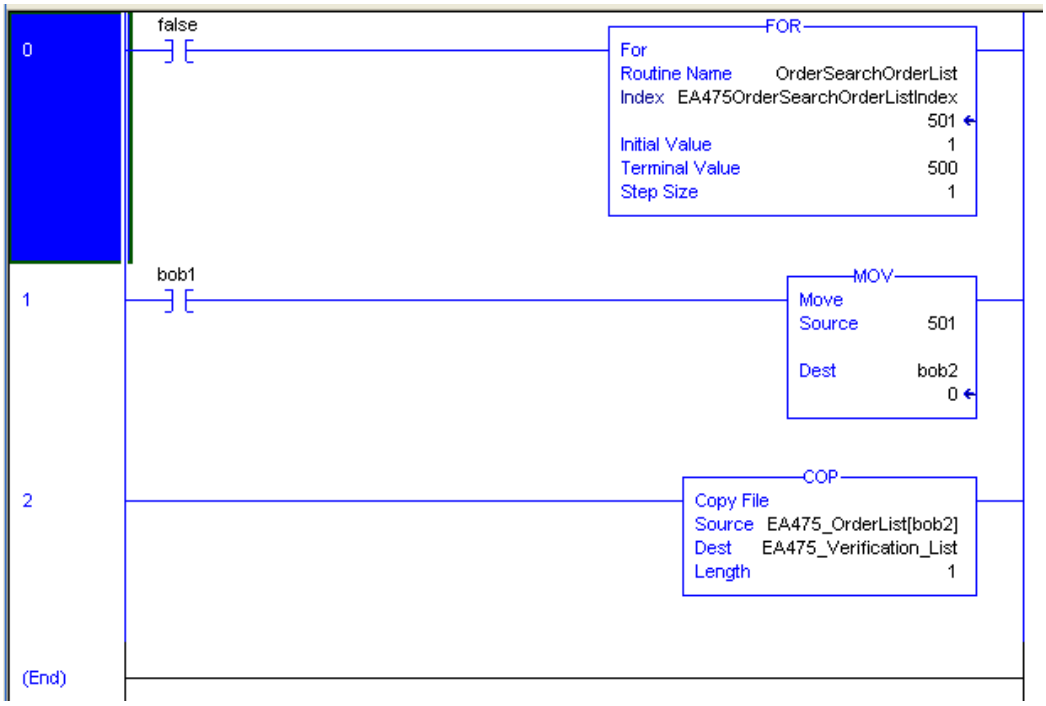
Cat. No.	Description
1769-L31 1769-L32C 1769-L32E 1769-L35CR 1769-L35E	**CORRECTED:** An anomaly can occur when you nest simultaneous branches in a Sequential Function Chart (SFC) routine as shown below.  Bottom-most Steps During normal operations, the logic does not step out of a simultaneous branch until all of the incoming legs have reached their bottom-most step. In the example shown, the logic does not step out of the Outer simultaneous branch until the leftmost leg has stepped out of the Inner simultaneous branch. The first time through the SFC routine, the application works as expected. On subsequent scans, however, the chart steps out of the Outer simultaneous branch even though the left leg has not reached the Inner simultaneous branch yet. This behavior occurs because the information in the bottom step, that is, the step next to the word Outer, remains from the previous scan. This stale information incorrectly causes the transition to move on as if the left leg is at the bottom step when it actually is not. To work around this anomaly, confirm all of the incoming legs have reached their bottom steps in the transition. You can check the .*x* bits to make sure the bottom-most step of each converging leg is active before allowing the chart to advance. This check can be added to the transition logic already present. For example, the steps in the following expression are the bottom steps (see graphic above) of the incoming legs. Each step has a timer. The transition does not move on until all of the step timers have reached their preset value. The expression can be modified to be sure those steps are truly active. This is the **original expression**: // Unit is ready to Transition Step1_ready.dn and Step2_ready.dn and Step3_ready.dn and Step4_ready.dn and Step5_ready.dn This is the **modified expression** to work around this anomaly. // Unit is ready to Transition Step1_ready.*x* and Step2_ready.*x* and Step3_ready.*x* and Step4_ready.*x* and Step5_ready.*x* and Step1_ready.dn and Step2_ready.dn and Step3_ready.dn and Step4_ready.dn and Step5_ready.dn **IMPORTANT**: The *x* bit is cleared when the chart transitions out of a step. Adding this check to the condition forces the engine to wait until all of those steps are genuinely active before advancing out of the simultaneous branch. Lgx00118188, Lgx00116506
	CORRECTED: Applications that have a large quantity of HMI tags on scan in the controller can experience a non-recoverable major fault when doing online edits. Lgx00118192, Lgx00115817
	CORRECTED: Even though the message path is incorrect, messages to the CompactBus will complete. For example, a path of 1,3,10,3 would go to the Compact I/O™ module in slot 3 when it should error. The path should have been 1,3,1,3. Lgx00122439, Lgx00120959

Table 9 - Corrected Anomalies with Firmware Revision 20.011 (continued)

Cat. No.	Description
1769-L31 1769-L32C 1769-L32E 1769-L35CR 1769-L35E	**CORRECTED:** If a FOR instruction is scanned true and an instruction has an index out of range that references a UDT or multi-dimensional array, the controller will fault. Clearing the fault and returning to run mode will cause a nonrecoverable major fault.  Lgx00118589, Lgx00113423
	CORRECTED: When producing a UDT that ends with a single BOOL data type and is consumed as a unicast connection, the values in the produced tag are not seen by the consumer and a 203 connection timeout error is shown. Lgx00118911, Lgx00116634
	CORRECTED: When performing indirect addressing of Boolean arrays that are inside UDTs, only Boolean arrays are affected. This figure is an example of a UDT that contains a Boolean array. Members: Data Type Size: 16 byte(s) Name / Data Type / Style / Des Boolean_Array / BOOL[64] / Decimal Test_Bit / BOOL / Decimal Dint_Value / DINT / Decimal If application code utilizes indirect addressing to manipulate bits in Boolean_Array, it is extremely important to keep indexes within valid limits. If application code uses an index greater than 63 for Boolean_Array, a major recoverable fault of Type 04/Code20 should occur. However, in this scenario, the controller will not fault. Instead, the data will be written to the next tag below Boolean_Array. For example, if the index is 64, it will actually manipulate the member Test_Bit. If the value of index is greater than 64, it will then begin affecting the member Dint_Value. The major recoverable fault Type 04/Code 20 will be logged if the value in the indirect address causes the code to write outside the UDT. Lgx00122441, Lgx00120456
	CORRECTED: If the data types do not match in the JSR and SBR when passing a BOOL data type into a subroutine with the JSR and SBR, data corruption can occur. Lgx00123921, Lgx00123385

Known Anomalies

These anomalies have been identified with firmware revisions 20.012 and 20.011.

Table 10 - Known Anomalies with Firmware Revisions 20.012 and 20.011

Cat. No.	Description
1769-L31 1769-L32C 1769-L32E 1769-L35CR 1769-L35E	
	No matter how you have configured the RPIs for the I/O on the local CompactBus, the controller will log a minor fault Code 3 Type 93. If you clear this error, the fault will occur again in 35…40 minutes. If this minor error is showing up more often, you have an application issue that needs to be corrected, for example, RPIs are set too fast, user tasks at or above priority 6, performing high speed trending. Lgx00129117, Lgx00129124
	When using the Automatic Device Configuration (ADC) feature, the Logix controller 'owns' the configuration in the drive. Do not use the HIM or other external tools, such as DriveExplorer, to change drive parameters. Doing so may cause a sequence of events to occur that results in the connection between the controller and the drive to be dropped, and causes the controller to not be able to re-establish the connection. Consider using the Write Mask function (drive Parameter 888 - [Write Mask Cfg]) to prevent tools connected to ports other than the Embedded EtherNet/IP port from writing to the drive. Lgx00129012, Lgx00129165
	PI function block appears to stop executing as the output does not change and no instruction faults are logged. If the PI instruction is being used in Linear mode, this floating-point equation is used to calculate the ITerm. $$Kp \times Wld \times \frac{WldInput + WldInput_{n-1}}{2} \times DeltaT + ITerm_{n-1}$$ Due to the use of the single-precision floating point values, it may be possible, depending on the values of WLD and KP, for the ITerm value to be small enough, less than 0.0000001, to be lost when adding to the $ITerm_{n-1}$. For more information regarding the PI instruction, see the Logix5000 Controllers Process Control and Drives Instructions User Manual, publication 1756-RM006. Lgx00070832
	Changes made to the Buffer Timeout value for FactoryTalk Alarms and Events subscribers do not take effect until the existing buffer has been deleted. The FactoryTalk alarm buffer (stored in Logix controller memory) is designed to persist through power cycles. If you change the Buffer Timeout value (via the Communication Setup dialog box in FactoryTalk View SE software), the controller does not use the new timeout value until the existing buffer is deleted and then recreated. To force recreation of this buffer, do one of the following: • Redownload the project to the controller. • Disconnect the FactoryTalk Alarms and Events subscriber and leave it disconnected until the existing timeout expires. Lgx00069461
	The MinDurationPRE and MinDurationACC members of ALARM_ANALOG and ALARM_DIGITAL tags are defined as DINT (signed double integer) but they are treated as UDINT (unsigned double integer) by Logix firmware. This causes negative values of the tag members to be handled as large positive numbers when they should be handled as zero. Lgx00119996, Lgx00119981
	When you accept edits in LD, ST, and FBD, the controller will log an 'Online Edit' entry in the controller log. Accepting edits in a SFC routine is done by performing a partial import, resulting in a 'Transaction Commit' entry in the controller log. This is confusing because the user can select to mask both entries separately. Selecting only Online edits would cause the Audit Value to change only when FBD, ST, and LD edits are made. SFC online edits would change the Audit Value only if the 'Partial Import Online Transaction Completed' bit was set. Lgx00122528, Lgx00122622

Table 10 - Known Anomalies with Firmware Revisions 20.012 and 20.011 (continued)

Cat. No.	Description
1769-L31 1769-L32C 1769-L32E 1769-L35CR 1769-L35E	In SFCs, when using time-limited actions in steps, if the program stays on a given step for greater than 24 days (2**32 ms) the timer's accumulator (ACC) will roll over and the action body starts to execute again. The time-limited action initializes its timer when it starts (step is first scanned). On subsequent scans, it compares the timers PRE and ACC value. If ACC<PRE, the action body will execute. If ACC >=PRE, it is not executed. When the roll over occurs, the ACC,PRE and the action body will again execute when it should not. Lgx00124689, Lgx00124697
	The controller only supports three active reconfigure messages at a time. If more than three are triggered at a time, they will complete (DN bit will go high), but not all the modules will be reconfigured. For example, if you send five reconfiguration messages at the same time, three reconfigure messages will truly complete (DN bit will go high), and the I/O modules will be reconfigured. The other two reconfigure messages will indicate complete (DN bit will go high), but the I/O modules will not be reconfigured. In this case, the last two should have errored (ER bit), but do not. Lgx00125204, Lgx00124996
	Log On to FactoryTalk Dialog Box Displays When Launching RSLogix 5000 Software When launching RSLogix 5000 software, the Log On to FactoryTalk dialog box may be displayed. This dialog box may be seen when you do not have Administrator privileges on the personal computer and the current user does not exist in the FactoryTalk directory. If this dialog box is cancelled, the RSLogix 5000 software will not be launched. When the dialog box is displayed, entering the credentials for a user that has Administrator privileges on the personal computer will then allow RSLogix 5000 software to be launched. To avoid seeing this dialog box, you can add the current user or user group to the FactoryTalk directory. Follow these steps to add a user or user group to the FactoryTalk directory. 1. Launch the FactoryTalk Administration Console (available from the Start menu). 2. Select the Network directory when prompted. (You may need to provide credentials for a user with Administrator privileges in order to continue.) 3. To allow access for a particular user, navigate to Network\System\Users and Groups\Users, right-click the Users folder and choose New>Windows Linked User. 4. Click Add and provide the domain\logon name for the desired user. (You can click Check Names to verify that the name was found.) 5. To allow access for all authenticated users, navigate to Network\System\Users and Groups\User Groups, right-click the User Groups folder and choose New>Windows Linked User Group. 6. Click Add and type the name of the user group, Authenticated Users. The Log On to FactoryTalk dialog box may also display when using Remote Desktop to connect to the personal computer running RSLogix 5000 software. This is due to FactoryTalk Security not recognizing the computer name. To enable access through Remote Desktop for a specific computer, you should add the name of the computer initiating the Remote Desktop connection to the Network\System\Computers and Groups\Computers folder in the FactoryTalk Administration Console. To allow all computers to connect, follow these steps. 1. Open the FactoryTalk Administration Console and log in to the Network directory using your domain credentials. 2. Navigate to Network\System\Security Policy. In the Computer Policy Settings section, set Identify terminal server clients using the name of to Server Computer. **Important**: If Use single sign-on is set to disable in FactoryTalk software, then the Log On to FactoryTalk dialog box will be displayed each time RSLogix 5000 software is launched and proper user credentials must be entered in order to continue. (By default, 'Use single sign-on' is set to **enable**.) Lgx00124955

Restrictions

These restrictions exist for firmware revisions 20.011...20.013.

Restrictions with Firmware Revisions 20.011 and 20.013

<table>
<tr><th>Cat. No.</th><th>Description</th></tr>
<tr><td rowspan="8">1769-L31
1769-L32C
1769-L32E
1769-L35CR
1769-L35E</td><td>The end cap must be attached to the CompactLogix system before you upgrade the controller or I/O module.</td></tr>
<tr><td>Enabling the time synchronization feature of a CompactLogix controller results in the controller becoming the local master. It does not result in the controller becoming synchronized with other wall clock times in the system.</td></tr>
<tr><td>If a 1769 I/O fault occurs, you must cycle power to the CompactLogix controller after clearing the major fault. I/O communication is not restored until after the power cycle. You should never use the fault handling routine to clear local I/O faults. You should clear local I/O faults manually on a per case basis, and then the controller should be power cycled.</td></tr>
<tr><td>With RSLogix 5000 programming software, version 20, and controller firmware revision 20.011, the Fault/Program states for Compact I/O modules are not supported and cannot be configured by using the Module Configuration dialog box.
Because the CompactLogix system does not provide support for local modules to use the alternate outputs, do not configure the attributes or tags listed below. These tags are still created when you add the I/O modules to the configuration.
Attribute Tags to Avoid<table><tr><th>For Digital Output Modules</th><th>For Analog Output Modules</th></tr><tr><td>• ProgToFaultEn
• ProgMode
• ProgValue
• FaultMode
• FaultValue</td><td>• CHxProgToFaultEn
• CHxProgMode
• CHxFaultMode
• Where CHx = the channel number</td></tr></table></td></tr>
<tr><td>Tasks are the basic scheduling mechanism for executing a program and are created as part of the project and program creation process. In addition to other internal tasks, the CompactLogix controllers have an internal task to provide communication with the 1769 I/O modules. This task executes periodically at the Requested Packet Interval (RPI) selected in the properties of the CompactBus. If the task has not completed before it is time to execute again, a task overlap occurs. This task overlap causes the controller to declare a minor fault of Type = 6 (Task Overlap), Code = 4 (VA task).
You can use various strategies to resolve minor faults due to task watchdog timeout and/or task overlap. For more information, see RSLogix 5000 programming software Online Help ‘Identifying and Managing Tasks’. In the case of a minor fault caused by VA task overlap, increase the RPI until the overlap no longer occurs.</td></tr>
<tr><td>Arithmetic State flags anomalies.

1. When dealing with Floating point numbers, the controller does not truncate denormalized values or -0.0 . . . 0.0.
2. For an integer divide, when the denominator is 0, the S:N and S:Z are not set.
3. For the MOD instruction, the S:V is not set if an overflow occurred during the calculation.

Lgx00122480</td></tr>
<tr><td>In the Revision 18 Release Notes, a corrected anomaly was worded incorrectly. The wording was:

‘SSV class name SerialPort, attribute PendingComDriverID, does not set. With revision 18.11, attempts to use a SSV instruction to set the SerialPort class, PendingComDriverID attribute, are successful. Lgx00073954’

It should have stated that SSV’ing the PendingComDriverID is no longer supported.

Lgx00122787</td></tr>
<tr><td>The Logix CPU security tool does not work with version 20 controllers.</td></tr>
<tr><td>The RSLogix 5000 Clock Update tool does not support Windows 7 or Windows Server 2008 operating systems.</td></tr>
<tr><td>1769-L31</td><td>With a 1769-L31 controller, you cannot bridge from one serial port to the other. However, you can bridge from either serial port to the DeviceNet network via the 1769-SDN scanner.</td></tr>
</table>

Install the Controller Revision

To install the latest CompactLogix controllers revision, go to http://support.rockwellautomation.com/ControlFlash to download your revision. Then use the ControlFLASH utility to upgrade your controller.

Alternatively, if you have installed RSLogix 5000 software, version 17 or later, and related firmware, you may not need to complete the tasks described. The AutoFlash feature of RSLogix 5000 software, version 17, detects if your controller firmware needs upgraded upon a program download to the controller. If a firmware upgrade is necessary, AutoFlash will initiate an update.

After you have completed your firmware upgrade, you should complete these steps to verify that the upgrade was successful.

1. Cycle power to the controller.
2. Go online with the controller and view controller properties.
3. Verify that the firmware revision listed matches the firmware to which you intended to upgrade.
4. If the controller's firmware is not correct, initiate another firmware upgrade.

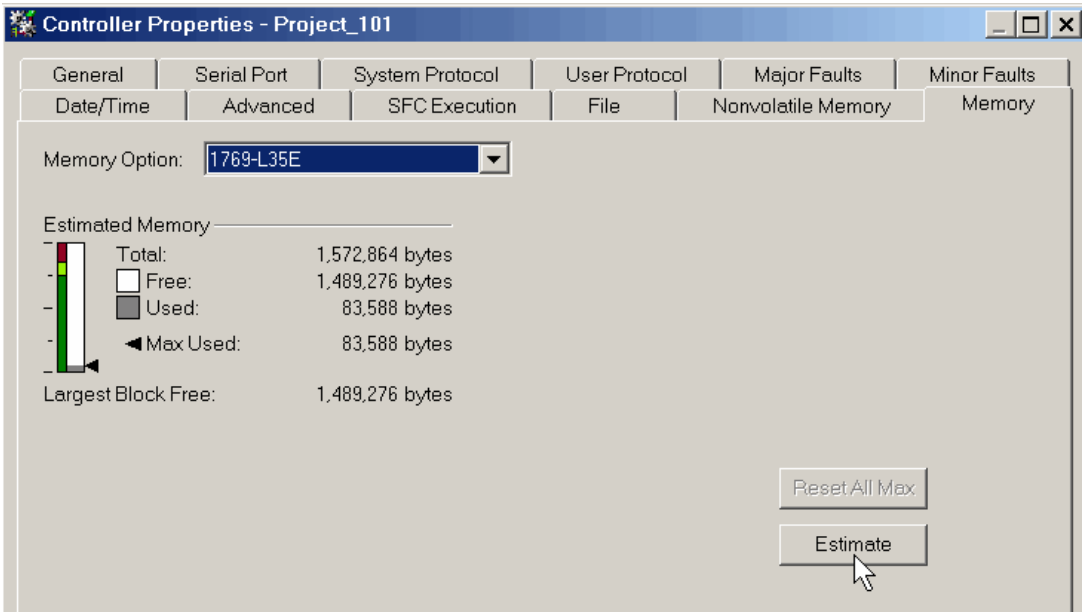
For more information about errors when completing a ControlFLASH upgrade, see the ControlFLASH Firmware Upgrade Kit Quick Start, publication 1756-QS105.

Additional Memory Requirements

This firmware revision may require more memory than previous revisions (for example, 17.*x*, 18.*x*). To estimate additional memory requirements for your application, you can either use the memory estimation tool provided with RSLogix 5000 software or the tables provided in these release notes.

Use the Estimate Tool

To estimate the amount of memory required by your application, convert the project to the controller revision desired and use the Estimate tool available in the Memory tab of the Controller Properties.



Estimate Based on Application Components

If you do not have the desired version of RSLogix 5000 programming software, use this table to estimate the additional memory that your project may require.

If you are upgrading your system through multiple firmware revisions, add all components your application uses for each of the revisions you upgrade through. For example, if you are upgrading from revision 16.*x* to revision 20.*x*, total your application components for revisions 16.*x* to 17.*x*, 17.*x* to 18.*x*, 18.*x* to 19.*x*, and 19.*x* to 20.*x*.

Table 11 - Additional Memory Requirements per Application Component

If you upgrade from revision (add all that apply)	Then add the following memory requirements to your project		Which comes from this type of memory		
	Component	Increase/Decrease Per Instance	I/O	Data and Logic	Safety
19.*x* to 20.*x*	Task	+ 1312 bytes		✓	
	Program	+ 16 bytes		✓	
	Equipment Phase	+ 8bytes		✓	
	Routine	+ 24 bytes		✓	
	Add-On Instruction	+ 32 bytes		✓	
	Project with any tags that use ALARM_ANALOG or ALARM_DIGITAL data type	- 76 bytes		✓	
	Tag that uses ALARM_ANALOG data type	+ 4 bytes		✓	
	Tag that uses ALARM_DIGITAL data type	+ 24 bytes		✓	
	Tag that uses MOTION_GROUP data type	+ 56 bytes		✓	
	Tag that uses COORDINATE_SYSTEM data type	+ 940 bytes		✓	
	Tag that uses AXIS_CIP_DRIVE data type	+ 676 bytes		✓	
	Tag that uses AXIS data type other than AXIS_CIP_DRIVE	+672 bytes		✓	
	Standard Produced Tag	+ 4 bytes + (4 bytes x number of consumers)	✓		
	Standard Consumed Tag	+ 12 bytes	✓		
	Safety Produced Tag	+ 4 bytes		✓	
	Safety Consumed Tag	+ 4 bytes		✓	
	I/O Module	+ 8 bytes		✓	
	Module input connection	+ 4 bytes		✓	
	Module output connection	+ 4 bytes		✓	
	For each controller (> 1K bytes change):				
	1756-L6x	+ 1264 bytes		✓	
	1756-L6x	+ 1268 bytes	✓		
	1756-L6xS	+ 1264 bytes		✓	
	1756-L6xS	+1316 bytes	✓		
	1756-L6xS	+ 1312 bytes			✓
	1756-L7x	+ 5588 bytes		✓	
	1756-L7x	+ 1296 bytes	✓		
	1768-L4x, 1768-L4xS	+1212 bytes		✓	
	1768-L4x	+ 1292 bytes	✓		
	1768-L4xS	+ 1340 bytes	✓		
	1768-L4xS	+ 1312 bytes			✓
	1769-L23	+2488 bytes	✓		

Table 11 - Additional Memory Requirements per Application Component (continued)

If you upgrade from revision (add all that apply)	Then add the following memory requirements to your project		Which comes from this type of memory		
	Component	**Increase/Decrease Per Instance**	**I/O**	**Data and Logic**	**Safety**
19.*x* to 20.*x*	1769-L31	+2492 bytes	✓		
	1769-L32C, 1769-L35CR	+ 2812 bytes	✓		
	1769-L32E, 1769-L35E	+ 2496 bytes	✓		
18.*x* to 19.*x*		<no change>			
17.*x* to 18.*x*	Program	+ 8 bytes		✓	
	Equipment phase	+ 20 bytes		✓	
	Add-On Instruction	+ 12 bytes		✓	
	Each tag In addition, if you use a tag of the types listed below, increase the memory as indicated for each instance:	+ 4 bytes		✓	
	Produced tag	+ 36 bytes + (24 bytes * number of consumers)	✓		
	Consumed tag	+ 24 bytes	✓		
	Data access control	+ 4 bytes per symbol		✓	
	Tag that uses ALARM_ANALOG data type	- 20 bytes		✓	
	Tag that uses ALARM_DIGITAL data type	+ 28 bytes		✓	
	Tag that uses MOTION_GROUP data type	+ 76 bytes		✓	
	Tag that uses AXIS_SERVO_DRIVE or AXIS_GENERIC_DRIVE data type	+ 786 bytes		✓	
	Tag that uses AXIS data type other than AXIS_SERVO_DRIVE or AXIS_GENERIC_DRIVE	+ 818 bytes		✓	
	Tag that uses COORDINATE_SYSTEM data type with no transform dimensions	+ 40 bytes		✓	
	Tag that uses COORDINATE_SYSTEM data type with transform dimensions	+ 100 bytes		✓	
	Module input connection	+ 20 bytes		✓	
	Module output connection	+ 24 bytes		✓	
	Safety controller	- 8 bytes		✓	
	Safety partner	- 8 bytes		✓	

Table 11 - Additional Memory Requirements per Application Component (continued)

If you upgrade from revision (add all that apply)	Then add the following memory requirements to your project		Which comes from this type of memory		
	Component	Increase/Decrease Per Instance	I/O	Data and Logic	Safety
17.*x* to 18.*x*	For each controller (> 1K bytes change):				
	1756-L6*x*, 1756-L6*x*S, 1756-L63XT	+ 16728 bytes		✓	
	1768-L4*x*, 1768-L4*x*S	+ 14448 bytes		✓	
	1769-L2*x*	+ 35084 bytes	✓		
	1769-L31	+ 14740 bytes	✓		
	1769-L32C, 1769-L35CR	+ 35400 bytes	✓		
	1769-L32E, 1769-L35E	+ 35036 bytes	✓		
	1789-L10, 1789-L30, 1789-L60	+ 4992 bytes	✓		
16.*x* to 17.*x*	Task	+ 4 bytes		✓	
	Program	+ 4 bytes		✓	
	Equipment phase	+ 8 bytes		✓	
	LD routine	+ 12 bytes		✓	
	FBD routine	- 8 bytes		✓	
	SFC routine	+ 28 bytes		✓	
	ST routine	+ 4 bytes		✓	
	Add-On Instruction	- 12 bytes		✓	
	If you use a tag of the types listed below, increase the memory as indicated for each instance:				
	Produced tag	+ [4 bytes + (4 bytes * number of consumers)]	✓		
	Consumed tag	+ 8 bytes	✓		
	Tag that uses MESSAGE data type	+ 4 bytes		✓	
	Tag that uses ALARM_ANALOG data type	- 64 bytes		✓	
	Tag that uses ALARM_DIGITAL data type	- 28 bytes		✓	
	Tag that uses AXIS_SERVO_DRIVE or AXIS_GENERIC_DRIVE data type	- 34 bytes (2 bytes x number of output cam execution targets)		✓	
	Tag that uses AXIS data type other than AXIS_SERVO_DRIVE or AXIS_GENERIC_DRIVE	- 52 bytes (2 bytes x number of output cam execution targets)		✓	
	Tag that uses COORDINATE_SYSTEM data type of 2 dimensions with 2 transform dimensions	+ 20 bytes		✓	
	Tag that uses COORDINATE_SYSTEM data type of 3 dimensions with 3 transform dimensions	+ 108 bytes		✓	

Table 11 - Additional Memory Requirements per Application Component (continued)

If you upgrade from revision (add all that apply)	Then add the following memory requirements to your project		Which comes from this type of memory		
	Component	**Increase/Decrease Per Instance**	**I/O**	**Data and Logic**	**Safety**
15.*x* to 16.*x*	If you use a tag of the types listed below, increase the memory as indicated for each instance:				
	Tag that uses ALARM_ANALOG data type (with no associated tag references)	+ 16 bytes		✓	
	Tag that uses ALARM_DIGITAL data type (with no associated tag references)	+ 4 bytes		✓	
	Tag that uses ALARM_ANALOG data type (if associated tags are configured for the ALARM_ANALOG tag)	+ 22 bytes + (9 x the number of configured, associated tags) + (3 x the sum of the bytes used by the data type of each of the configured associated tags) For example, an analog alarm moved to V16.03 with two Associated Tags – one DINT (4 bytes) and one STRING (88 bytes) would need to add: 22 + 9(2) + 3(92) = 316 bytes		✓	
	Tag that uses the COORDINATE_SYSTEM data type	+ 132 bytes		✓	
14.*x* to 15.*x*	Input module	+ 4 bytes	✓		
	If you use a tag of the types listed below, increase the memory as indicated for each instance:				
	Produced tag	+ 12 bytes	✓		
	Consumed tag	+ 4 bytes	✓		
	Tag that uses COORDINATE_SYSTEM data type	+ 748 bytes		✓	
	Tag the uses any AXIS data type	+ 800 bytes		✓	
	Task	+ 20 bytes		✓	
	Program or equipment phase	+ 24 bytes		✓	
	Routine	+ 4 bytes		✓	
	Serial port	+ 1120 bytes		✓	
	Project	+ 4012 bytes		✓	
13.*x* to 14.*x*	If you use a tag of the types listed below, increase the memory as indicated for each instance:				
	Tag that uses the COORDINATE SYSTEM data type	+ 60 bytes		✓	
	Tag that uses any AXIS data type	+ 4 bytes		✓	

Table 11 - Additional Memory Requirements per Application Component (continued)

If you upgrade from revision (add all that apply)	Then add the following memory requirements to your project		Which comes from this type of memory		
	Component	**Increase/Decrease Per Instance**	**I/O**	**Data and Logic**	**Safety**
12.*x* to 13.*x*	Program	+ 12 bytes		✓	
	Task	+ 4 bytes		✓	
	User-defined data type	+ 4 bytes		✓	
	I/O module	+ 16 bytes	✓ (8 bytes)	✓ (8 bytes)	
	If you use a tag of the types listed below, increase the memory as indicated for each instance:				
	Produced tag	+ 8 bytes	✓		
	Consumed tag	+ 8 bytes	✓		

Table 11 - Additional Memory Requirements per Application Component (continued)

If you upgrade from revision (add all that apply)	Then add the following memory requirements to your project				Which comes from this type of memory		
	Component			Increase/Decrease Per Instance	I/O	Data and Logic	Safety
13.*x* to 14.*x*	If you use a tag of the types listed below, increase the memory as indicated for each instance:						
	Tag that uses the COORDINATE SYSTEM data type			+ 60 bytes		✓	
	Tag that uses any AXIS data type			+ 4 bytes		✓	
12.*x* to 13.*x*	Program			+ 12 bytes		✓	
	Task			+ 4 bytes		✓	
	User-defined data type			+ 4 bytes		✓	
	I/O module			+ 16 bytes	✓ (8 bytes)	✓ (8 bytes)	
	If you use a tag of the types listed below, increase the memory as indicated for each instance:						
	Produced tag			+ 8 bytes	✓		
	Consumed tag			+ 8 bytes	✓		

Additional Resources

These resources contain additional information related to the CompactLogix controllers.

Resource	Description
1769 CompactLogix Controllers, Revision 17 Release Notes, publication 1769-RN017	Describes anomalies and enhancements related to controller revision 17.
1769 CompactLogix Controllers, Revision 18 Release Notes, publication 1769-RN018	Describes anomalies and restrictions specific to revision 18.
1769 CompactLogix Packaged Controllers, Revision 19 Release Notes, publication 1769-RN014	Describes anomalies and restrictions specific to revision 19 of the CompactLogix packaged controllers.
Logix5000 Controllers Common Procedures Reference Manual, publication 1756-PM001	Contains information specific to procedures related to programming your controller.
Rockwell Automation Technical Support Knowledgebase, http://www.rockwellautomation.com/knowledgebase/	Contains technical notes and other information related to upgrading your packaged controller's firmware.
ControlFLASH Firmware Upgrade Kit Quick Start, publication 1756-QS105	Contains informations about firmware upgrades, installation instructions, and error messages.

You can view or download publications at http://www.rockwellautomation.com/literature. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

Tech Notes and other resources are available at the Technical Support Knowledgebase, http://www.rockwellautomation.com/knowledgebase.

Rockwell Automation Support

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For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnect℠ support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit http://www.rockwellautomation.com/support/.

Installation Assistance

If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
Outside United States or Canada	Use the Worldwide Locator at http://www.rockwellautomation.com/support/americas/phone_en.html, or contact your local Rockwell Automation representative.

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Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

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Publication 1769-RN021C-EN-P - November 2012 PN-179368
Supersedes Publication 1769-RN021B-EN-P - May 2012
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