1769 CompactLogix Packaged Controllers, Revision 17

Catalog Numbers 1769-L23E-QB1B, 1769-L23E-QBFC1B, 1769-L23-QBFC1B

About This Publication

This publication describes enhancements and anomalies for CompactLogix controllers, revision 17.

About Publication 1769-RN012

This revision of the firmware release notes, 1769-RN012**C**, provides information specific to firmware revisions 17.04, 17.03, and 17.02 for all CompactLogix packaged controllers.

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Compatible Versions of Software

To use this packaged controller revision, the following minimum software versions are required.

Software	Required Version
RSLinx Classic software RSLinx Enterprise software	2.54 (CPR 9, SR 1) 5.17 (CPR 9, SR 1)
RSLogix 5000 programming software	17.00 (CPR 9, SR 1)
RSNetWorx for ControlNet software	9.00 (CPR 9, SR 1)
RSNetWorx for DeviceNet software	
RSNetWorx for EtherNet/IP software	

Before You Begin

Consider this information before upgrading your packaged controller firmware.

Avoid Interrupting the Firmware Upgrade

IMPORTANT

When upgrading your packaged controller firmware, it is **extremely** important to allow the upgrade to complete without interruption.

If you interrupt the firmware upgrade either in the software or by disturbing the physical media, you may render the packaged controller inoperable.

During an upgrade of the CompactLogix firmware, the ControlFlash utility displays various progress dialog boxes. The progress dialog boxes contain these status statements:

- Transmitting block…
- Polling for power-up…

It is crucial that you do not interrupt the firmware upgrade while these progress statements display. Once the Update Status dialog box indicates that the firmware upgrade is complete, you may adjust your controller's network connection, make changes using controller-related software, or cycle controller power.

For more information about upgrading your CompactLogix packaged controller firmware, see information posted at http://www.rockwellautomation.com/knowledgebase/.

Avoid a Loss of Communication During the Firmware Upgrade

IMPORTANT Loss of communication or power during a controller firmware flash upgrade may result in the controller's rejection of the new firmware. If the controller firmware upgrade fails due to those conditions described, the following corrective actions may be required:

- Cycle controller power with the battery disconnected for 2…3 minutes, then successfully complete the flash upgrade.
- If a nonrecoverable fault occurs, then return the controller for factory repair.

Use the End Cap Properly

Verify that your CompactLogix packaged-controller end cap is attached and locked before upgrading your firmware. Failure to attach and lock the end cap may result in a failure of the upgrade.

System Preparations Required Before Upgrading

The following preliminary actions are required before upgrading your packaged controller firmware.

If	Then
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.

Corrected Anomalies

This table lists corrected anomalies for the 1769 CompactLogix Packaged Controllers.

Corrected Anomalies

Cat. Nos.	Revision No.	Anomaly	Description
1769-L23E-QB1B, 1769-L23E-QBFC1B, 1769-L23-QBFC1B	17.04	Outputs remotely located via a network may not go to their predefined PROGRAM mode state on a change out of RUN mode	When a controller changes from RUN mode to a non-RUN mode state, that is to PROGRAM mode or a recoverable faulted state, the controller's outputs may not transition to their predefined PROGRAM mode state. Any of the following transitions from RUN mode to a non-RUN mode may cause this anomaly to occur: • The key switch on the controller is turned from RUN mode to PROGRAM mode. • A remote command is sent to the controller to change from RUN mode to PROGRAM mode • The controller detects a major recoverable fault that causes an operating mode change from RUN mode to a faulted mode. If your experience a major non-recoverable fault on your controller, the controller's outputs will transition to their predefined fault mode state. Lgx00099405
1769-L23E-QB1B, 1769-L23E-QBFC1B, 1769-L23-QBFC1B	17.04	The CONNECTION_STATUS.RunMode indication in a Produced tag may not indicate correctly.	When using Produced/Consumed tags with CONNECTION_STATUS, the CONECTION_STATUS.RunMode indication in the producing controller may not indicate correctly if it is not in RUN mode. The CONNECTION_STATUS.RunMode indication in the Consuming controller will indicate correctly. Lgx00099405

Corrected Anomalies

Cat. Nos.	Revision No.	Anomaly	Description
1769-L23E-QB1B, 1769-L23E-QBFC1B, 1769-L23-QBFC1B	17.03	A motion group-synchronization error occurs in applications that use a virtual axis. The error displays after controller power is cycled and motion instructions are executed.	This anomaly may be observed in 1769-L2*x* applications where a virtual axis is used and a motion instruction is carried out either by the program or by a Motion Direct Command. This anomaly may occur with these actions: 1. The 1769-L2*x* controller is set as the Coordinated System Time (CST) master. 2. Controller power is cycled. 3. Any motion instruction is executed via programming or a Motion Direct Command. When the motion instruction attempts to execute, an error displays indicating that the 'Motion Group is not in the Synchronized State (err 19D or 0013H)'. Upon further troubleshooting, if the CST master property of the controller is unchecked and applied, then checked and applied, motion instructions can be executed properly. This firmware revision corrects this anomaly by synchronizing the CST upon powerup if the controller is set to be the CST master. Lgx00093619

Known Anomalies

This table lists known anomalies of packaged controllers at any revision of 17 firmware. The leftmost column identifies the catalog numbers affected.

Known Anomalies

Cat. No.	Anomaly	Description
1769-L23E-QB1B, 1769-L23E-QBFC1	Use of the packaged controller within Ethernet connection limits, but at or near maximum limits, may result in No Buffer Memory, error code 0x301.	If you use your packaged controller at, or very near, the maximum Ethernet connection limits with produced/consumed tags, you may experience over-connection limit errors. This anomaly will be experienced only if your configured RPI rates are not binary multiples of 2 ms. This is because the CompactLogix packaged controllers round the RPI down to the nearest binary multiple to make connections (for example, setting an RPI of 100 ms results in the packaged controller sending data at 64 ms). If you experience this anomalous behavior, adjust the RPI of controllers consuming data from the CompactLogix packaged controller until the RPI rates are within the capabilities of the packaged controller. In addition, determine which communication module has exceeded the connection limit and adjust its RPI accordingly. Lgx00087882

Restrictions

This restriction applies to the use of CompactLogix controllers at all minor revisions of firmware revision 17. That is, this restriction applies to the use of packaged controllers are revision 17.02 and later.

Restrictions

Restriction	Description
Attempting a firmware upgrade without the packaged controller end cap attached does not complete.	When upgrading your packaged controller firmware, verify that your end cap is properly attached and locked. If you attempt to upgrade without the end cap attached, your firmware upgrade may not complete successfully. Lgx00085396

Known Issues

These sections describe known issues associated with this packaged controller firmware revision that may affect the use of your packaged controller.

Controller Bridging via Serial Ports (1769-L23-QBFC1B packaged controller only)

With a 1769-L23-QBFC1B packaged controller, you cannot bridge from one serial port to the other. However, you can bridge from either serial port to DeviceNet network via the 1769-SDN scanner.

VA Task Overlap (all 1769 CompactLogix packaged controllers)

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 packaged 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 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.

Cycle Power to Clear a Major Fault Related to 1769 I/O (all CompactLogix packaged controllers)

If a 1769 I/O fault occurs, you must cycle power to the CompactLogix packaged 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 packaged controller should be power cycled.

Fault/Program Action Feature Not Enabled (all CompactLogix packaged controllers)

The embedded I/O and expansion I/O modules used with the packaged controller cannot be set with fault or program state outputs. The CompactLogix packaged controller does not support the ability to trigger the Fault/Program Action features, even though you can configure these options in RSLogix 5000 software via the Module Properties dialog box.

If a local I/O module loses communication with the packaged controller, or, the packaged controller is placed in Program mode, the local I/O modules turn their outputs off - regardless of the configuration specified in the Fault/Program Action tab.

In addition, RSLogix 5000 software generates configuration tags for embedded I/O and expansion I/O when you add the controller or expansion modules to the I/O configuration tree. Some of these tags define configuration (C) data type members that may include attributes for alternate outputs (that is, Fault or Program output states).

Since the CompactLogix system does not provide support for local modules to use the alternate outputs, do not configure the attributes or tags listed below.

Attribuites and Tags To Avoid

For Digital Output Modules	For Analog Output Modules
• ProgToFaultEn • ProgMode • ProgValue • FaultMode • FaultValue	• CHxProgToFaultEn • CHxProgMode • CHxFaultMode • Where CHx = the channel number

Lgx00086275

Install the Controller Revision

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

Alternatively, if you have installed RSLogix 5000 software, version 17, and related firmware, you may not need to complete the tasks described. The AutoFlash feature of RSLogix 5000 software, version 17, detects if your packaged controller firmware needs upgraded upon a program download to the packaged 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 packaged controller.
2. Go online with the packaged controller and view packaged controller properties.
3. Verify that the firmware revision listed matches the firmware to which you intended to upgrade.
4. If the packaged 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 Resources

These resources contain additional information related to the CompactLogix packaged controllers.

Resource	Description
CompactLogix Packaged Controllers Quick Start and User Manual, publication IASIMP-QS010	Provides procedures for using your CompactLogix packaged controller as well as additional reference information.
CompactLogix Controllers Selection Guide, publication 1769-SG001	Provides specifications and other information related to the selection of CompactLogix controllers.
Compact I/O Selection Guide, publication 1769-SG002	Provides information about calculating the number of expansion I/O that can be used with your packaged 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.
CompactLogix Packaged Controllers Installation Instructions, publication 1769-IN082	Contains complete instructions for installing your CompactLogix packaged controller.
Logix5000 Controllers Common Procedures Reference Manual, publication 1756-PM001	Contains information specific to Add-On Instructions.
ControlFlash Firmware Upgrade Kit Quick Start, publication 1756-QS105	Contains informations about firmware upgrades, installation instructions, and error messages.

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

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

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation, Vorstlaan/Boulevard du Souverain 36, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

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