Release Notes

(9324-RLDx) Studio 5000 programming software. All you need for discrete, process, batch, motion, safety etc.
Version 28.00.02 (released 1/2016)

Catalog Number Studio 5000 Logix Designer

These release notes describe version information for (9324-RLDx) Studio 5000 programming software. All you need for discrete, process, batch, motion, safety etc., version 28.00.02 (released 1/2016).

System Requirements

This release has the following system requirements.

System Requirements Hardware requirements for Studio 5000 Logix Designer version 28

The personal computer must meet these minimum requirements. Using a computer meeting or exceeding the recommended characteristics will improve performance.

Characteristic	Minimum	Recommended
Processor	Intel® Core 2 Duo at 2.8 GHz	Intel Core i5 at 2.4 GHz
RAM Memory	4 GB	8 GB
Hard Disk Space	16 GB free	20 GB free
Graphics Device	DirectX 9, with WDDM 1.0 or higher driver	DirectX 9, with WDDM 1.0 or higher driver

System Requirements Installation notes for Studio 5000 Logix Designer version 28

Review these notes before attempting to install this version of the Studio 5000® environment.

Prior to Installation

Keep the following considerations in mind before you install the Studio 5000 environment.

- Be certain that no copies of Logix Designer application or RSLogix 5000 software are currently running.
- Some antivirus software blocks or disrupts the Studio 5000 environment installation. If you experience difficulty, try disabling your antivirus software before installation and re-enable it after you install the Studio 5000 environment.
- Make sure that you have Administrator privileges on the personal computer on which you want to install the Studio 5000 environment. You will not be able to complete the installation without these privileges.
- Close all other applications before running the setup process.

- Ensure that there are no pending workstation reboot requests from either Windows Update or any installation program. If there is a pending request, reboot the workstation before starting the Studio 5000 environment installation.
- The Logix Designer application has an optimized EDS subsystem. While this provides significantly better installation time, it can cause some compatibility issues with other software packages. The following list shows some of these incompatibilities.

Installing one of the following software versions will cause prior versions of RSNetWorx and the DeviceNet Tag Generator to become inoperable.

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  o Logix Designer application v21 and later
  o RSNetWorx v25 and later
  o RSLinx v3.51 and later
  o Add-On Profiles using Core 9.0 and later
  o DeviceNet Tag Generator

Important:	During the installation of Logix Designer application, the installation stops and a dialog box opens if an incompatible version of RSNetWorx software is detected on the PC. Upgrade RSNetWorx software to version 21 or later or uninstall it from your PC, and restart the Studio 5000 environment installation.

Installing the Software

Follow these steps to install the Studio 5000 environment.

1. Start your personal computer.
2. Insert the Studio 5000 environment installation DVD into your DVD-ROM drive.

- The DVD-ROM should auto-start. If it does not auto-start, run Setup.exe from the root of the DVD.
- The Studio 5000 environment supports multiple versions of the programming software on a single personal computer. With version 10 and later of the application, you may install as many of the later major versions as needed plus one version earlier than version 10 (for example, version 8.02).

3. Follow the directions that appear on your screen.

- Note that the Studio 5000 environment may need to update several system files early in the installation process. These updates will likely require you to restart your personal computer. Be sure to close all other applications before clicking **OK** to initiate this reboot.
- When prompted for a serial number, enter the 10-digit serial number identifying your software license; otherwise, enter any sequence of characters, not longer than 10 characters.

Important:	The 10-digit serial number is used to determine what functionality to enable while in Grace Period mode. Entering an invalid serial number will result in the application operating in Service Edition mode, upload and download only, while in Grace Period mode.

4. When prompted, click **Activate Studio 5000** to complete the activation of the software.
5. Follow the directions that appear on your screen and refer to the FactoryTalk Activation insert for additional information.

Important:	When a valid activation cannot be located by the application, the application will enter a seven-day activation grace period, during which you will be able to run the application with full functionality. If this seven-day grace period ends before a valid activation has been found, you will no longer be able to start the Logix Designer application.

6. Click **Close** to complete the installation.

   When the setup utility finishes, an entry for the Studio 5000 environment appears in the program list in the Rockwell Software group.

7. Remove the Studio 5000 environment DVD from the DVD-ROM drive and store it in a safe place.

Starting the Studio 5000 Environment

To start the Studio 5000 environment, from the Start menu, choose **All Programs>Rockwell Software>Studio 5000** from the menu.

If Studio 5000 environment does not start up or run properly, keep the following in mind:

- Do you have the correct version of RSLinx Classic software installed? RSLinx Classic software provides communication between the controller and your personal computer.
- Does your computer have enough memory? Running the Studio 5000 Engineering and Design Environment requires a minimum of 4 GB of RAM.

Uninstalling the Software

Follow these steps to uninstall the software when using the default Start menu on the Windows 7, Windows 8, Windows Server 2008R2, or Windows Server 2012 operating system.

1. From **Windows Explorer**, navigate to **Control Panel\Programs\Programs and Features**.
2. From this dialog box, double-click **Studio 5000 Logix Designer <version>**, and follow the prompts to uninstall.
3. If all Studio 5000 Logix Designer <version> applications have been uninstalled, from this dialog box, double-click **Studio 5000 Launcher**, and follow the prompts to uninstall.

Tip:	This will uninstall only the Studio 5000 environment. Other components that were installed with the Studio 5000 environment (such as Start Page Media, Online Books, or RSLinx) must be uninstalled separately.

System Requirements Software requirements for Studio 5000 Logix Designer version 28.00

Operating system and service pack compatibility:

- This version of the Logix Designer application has been tested on the following operating systems:
    - Microsoft® Windows® 7 Professional (64-bit) with Service Pack 1
    - Microsoft 7 Home Premium (32-bit) with Service Pack 1
    - Microsoft Windows Server 2008 R2 Standard Edition with Service Pack 1
    - Microsoft Windows 8 Professional (64-bit)
    - Microsoft Windows 8.1 Professional (64-bit)

o   Microsoft Windows Server 2012 Standard Edition (server version of Windows 8)

Important:	While the Windows 8 and Windows 8.1 operating systems run on many touch-enabled devices, various features of the Logix Designer application may not be touch-enabled. Most functions are expected to work with touch, but the software has only been tested with a keyboard and mouse.

- This version of Logix Designer is expected to operate correctly on all other editions and service packs of the following operating systems but has not been tested:
    o   Microsoft Windows 7
    o   Microsoft Windows Server 2008 R2
    o   Microsoft Windows 8
    o   Microsoft Windows Server 2012
    o   Microsoft Windows Server 2012 R2

Important:	Logix Designer application may fail to launch if the Microsoft Windows 10 operating system is installed on your personal computer.

The Start Page requires the Adobe Flash Player ActiveX Control to be installed prior to operation of the Start Page.

The Adobe Flash Player ActiveX Control can be downloaded from Adobe's website at: http://get.adobe.com/flashplayer/

Note:	For Windows 8 (and later), the Start Page will work because those versions of Windows have flash integrated.

For operating systems that support User Account Control (UAC), this version of the Logix Designer application was tested with UAC set to the most restrictive level (Always notify for Windows 7). This version of the Logix Designer application is also expected to operate correctly when UAC is configured for any less restrictive setting.

Running the Logix Designer application in conjunction with Fast-User Switching, in Safe mode, or via Remote Desktop is not supported.

Additional Software Product Considerations

- Certain operations related to Factory Talk Security are slower on Windows 7 then they are on Windows 8.
    o   Importing or Exporting a FactoryTalk Services Platform secured project
    o   Securing a controller or a component of a controller with logical name or permission set
    o   Clicking the **Security** tab in the **Controller Properties** dialog box.
- FactoryTalk Services Platform is required to run this version of the Logix Designer application, as it performs some security functions in the Logix Designer application.

- RSLinx Classic communication software is required as part of the installation of the Logix Designer application, as it handles online communication with controllers.
- RSLinx Classic v3.80.00 is a component aligned to Logix Designer v28.00. RSLinx Classic v3.80.00 (CPR9 Service Release 8) has been tested, and is compatible, with the following products:
  - FactoryTalk Services Platform v2.80.00
  - RSLinx Enterprise v5.80.00
  - RSNetWorx v25.00.00
  - FactoryTalk Activation Manager v3.62.11
- RSLinx Classic v3.74.00, Logix Designer application v28.00, and device profiles that ship with the Logix Designer application v28.00 are not compatible with:
  - RSNetWorx v11.00.00 or earlier
  - DeviceNet Tag Generator v11.0.20.0

RSNetWorx and the DeviceNet Tag Generator must be upgraded prior to installing these products.

- FactoryTalk View SE software and RSLinx Enterprise communication software are not required to install the Logix Designer application; however, these products are required in order to fully use the alarm capabilities introduced with RSLogix 5000 v16.
- Microsoft .NET Framework 4 Language Pack is required to show the localized resources for the components developed by .NET for supported languages of the Logix Designer application v21 and later. You need to download and install Microsoft .NET Framework 4 Language Pack or later on the computer in which the Logix Designer application local language is installed.
- Be sure to check the software requirements for other Rockwell Software® products that you intend to install to be sure that these products are also compatible with the system.

Software

	Logix Designer/RSLogix 5000 Version					
	28.00	27.00	26.01	24.01/24.00	23.00	21.03 / 21.00
FactoryTalk Services Platform	2.80.00	2.74.00	2.73.00	2.71.00	2.61.00	2.51.00.8
FactoryTalk AssetCentre	6.10.00	6.10.00	6.00.00	5.00.00	5.00.00	4.10.00
RSLinx Classic	3.80.00	3.74.00	3.73.00	3.71.00	3.61.00	3.51.00.10
RSLinx Enterprise	5.80.00	5.74.00	5.73.00	5.71.00	5.61.00	5.51.00.04
RSNetWorx (ControlNet™, DeviceNet™, EtherNet/IP™)	25.00.00	24.05.00	24.00.00	24.00.00	21.00.00	21.00.00

Firmware

Most of the modules supported by the Logix Designer application use Flash-ROM for the storage of firmware. If you possess a module that requires a firmware change, the ControlFLASH software tool can be used to perform an update to this Flash-ROM. This software tool and the firmware images for most of the supported modules are contained on a DVD-ROM shipped with Rockwell Software Studio 5000 Automation Engineering & Design Environment™. Starting with version 10.00.00 of the application, you can access the ControlFLASH tool from within the application (from the **Tools** menu), or you can automatically update your firmware as part of the project download process.

For additional information and assistance in performing a Flash-ROM update, review the ControlFLASH Firmware Upgrade Software User Manual, publication 1756-UM105.

In addition, Rockwell Automation Services & Support has created a website from which you can download firmware images for Logix products. Go to http://www.rockwellautomation.com/rockwellautomation/support/firmware/overview.page? for a matrix detailing the revisions of firmware that were released with each of the versions of the application, and to download the ControlFLASH firmware kits and release notes. Note that you will need your Logix Designer application serial number to complete the download.

Firmware for ControlLogix Redundancy

The firmware associated with this standard release version of the Logix Designer application does not support redundancy. RSLogix 5000 software versions 8, 11, 13, 15, 16, 19, and 20 support redundancy, but a separate firmware revision for the hardware in the local chassis is required. The redundancy firmware revisions are released later than the standard revisions are released and are available for download via the same methods as for standard firmware. Go to http://www.rockwellautomation.com/rockwellautomation/support/firmware/overview.page? for a matrix detailing the revisions of redundancy firmware that were released for each of the versions of RSLogix 5000 software, and to download the ControlFLASH firmware kits and release notes. Note that you will need your RSLogix 5000 serial number to complete the download.

Separately Installed I/O Configuration Profiles

With version 13 and later of the application, new I/O configuration profiles can be delivered independently from the application's release. These profiles can be obtained independently and installed on a personal computer with the application to extend the I/O configuration support beyond the capabilities initially supported when the application was released. This capability was initially limited to a single I/O platform, but with each new release, new I/O platforms are added. If you are using one of the supported platforms and the configuration profile for a specific product was not included with the application, check with the module or device vendor to determine if one is available. Additionally, I/O configuration profiles for modules or devices from Rockwell Automation are generally provided with the application. However, at times, a module or device configuration profile may not be completed in time to make a release. In these instances, the I/O configuration profiles will be made available via the Rockwell Automation Services & Support website http://www.rockwellautomation.com/global/support/downloads.page? The following table provides a listing of versions of the application and their respective ability to support the field addition of I/O configuration profiles.

I/O Platform	I/O Profile Communication Methods Supported	Logix Designer/ RSLogix 5000 Version
Compact I/O™ (1769)	Local to CompactLogix	13.00 or later
CompactBlock™ Guard I/O™ (1732, 1791DS)	DeviceNet	14.00, 16.00 or later
CompactBlock Guard I/O (1791ES)	EtherNet/IP	16.00 or later
EtherNet/IP (1746-SLC IO)	EtherNet/IP	20.00 or later
POINT I/O™ (1734)	ControlNet, EtherNet/IP	15.00 or later
ArmorPOINT® I/O (1738)	ControlNet, EtherNet/IP	15.00 or later
PointGuard I/O (1734)	EtherNet/IP	17.00 or later
ControlLogix (1756)	Local, ControlNet, EtherNet/IP	15.00 or later
ControlNet Direct Connect	ControlNet	15.00 or later
EtherNet/IP Direct Connect	EtherNet/IP	15.00 or later
CompactLogix™ I/O (5069)	EtherNet/IP	28.00 or later

Electronic Data Sheets

The version of RSLinx Classic software provided with this version of the Logix Designer application includes an updated set of electronic data sheet (EDS) files for Rockwell Automation products. Installing this software ensures that RSLinx Classic software and RSNetWorx software will be able to work with the new revisions of firmware. These EDS files are also available separately by contacting Rockwell Automation Services & Support (phone +1 440-646-3434), or using the Internet (http://www.rockwellautomation.com/resources/eds/). You can install them by using the EDS Hardware Installation Tool, located in the **Rockwell Software>RSLinx>Tools** folder in the Windows Start Menu.

System Features

This release includes the following system features.

New features in this release for Studio 5000 Logix Designer version 28.00

The following new feature and functionality has been added to this release of the Logix Designer application.

Powerflex 755

The Powerflex 755 feature development adds 24-Bit Resolution capability to supported feedback devices and Servo I/O support for Powerflex 755 CIP Motion drives. The 755 CIP Motion drives have also been updated to accept new 11 and 22 Series servo I/O cards that should be placed in slot 7.

SequenceManager

Added in version 28 of the Logix Designer Application, SequenceManager provides the ability to create an Equipment Sequence program to run a single unit batch process within a Logix controller. Used in combination with PhaseManager, SequenceManager follows the ISA-88 methodology for automated batch control. Combining full state model execution, View Site Edition (SE) ActiveX controls, and batch event logging, this product provides flexible and scalable controller base batching solutions to single unit and OEM applications. Note that this functionality will be supported by the 5x80 family of controllers in a future release.

Permission sets and Logical Names

Use permission sets and Logical Names, configured in the FactoryTalk Administration Console, to control access to controller projects. Permission sets and Logical Names identify a set of actions that are allowed or denied for one or more user groups or computer groups. Use permission sets to apply the same permissions to multiple controllers or project components. Use a Logical Name to associate permissions with a specific controller.

Permission sets for project components

You can secure individual tags, routines, and Add-On Instructions with additional or different permissions than those assigned to protect a controller project. For example, you can apply permissions that allow a user to modify some tags, but not others. The security settings that you apply to a specific component override any security policy applied to the overall project.

Permissions for Guest Users

When you configure permission sets and logical names in the FactoryTalk Administration Console, you can also configure permissions for Guest Users. The permissions for Guest Users determine the level of access for users who are not authenticated on the same FactoryTalk directory that the project was secured with.

Secondary security authorities

When a project is protected by a primary security authority, you can configure a secondary security authority. The secondary security authority further restricts Guest Users beyond the permissions granted by the primary security authority. For example, an original equipment manufacturer (OEM) can secure a project with FactoryTalk Services Platform using a primary directory, and an end customer can further secure the project with their own FactoryTalk Services Platform directory.

New Build button on standard Toolbar

For the 5x80 family of controllers, the Build button on the standard Toolbar in Logix Designer application creates binary files compiled from user subroutines and caches them in the project .ACD file. If these binary files are present in the project during a download, then Logix Designer does not have to recompile them, saving time during the download process.

THIS Message to Self addition within Logix Designer

Added the ability to easily perform a message to self by using the word THIS within the communication path of a message instruction.

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Corrected Anomalies

This release corrects the following anomalies.

The PID Setup dialog box displays incorrect information when a PID is embedded in an Add-On Instruction (Lgx00174624, Lgx00173540)

Corrected Anomalies with Studio 5000 Logix Designer v24.01 and v28

The PID Setup dialog box displays incorrect information when a PID is embedded in an Add-On Instruction.

Two Cycle timing displayed Actual Utilization Motion (Task I/O Cycle) is twice of Estimated Utilization (Lgx00165236)

Anomaly

Studio 5000 Logix Designer v27.00

Anomaly corrected in Studio 5000 Logix Designer v28

When using 2-cycle timing mode, the Task I/O Cycle value under Actual Utilization - Motion on the Axis Schedule tab is not accurate. The actual value is (0.66 * value displayed). (Lgx00165236)

Tip: This value is accurately calculated when not using 2-cycle timing mode.

Cannot set the Final Connection for an imported tag when in Remote Run or Program mode (Lgx00165885)

Anomaly

Studio 5000 Logix Designer v27.00

Anomaly corrected in Studio 5000 Logix Designer v28

When the controller is in Remote Run or Program mode, you cannot set the Final Connection for an imported tag. As a workaround, go offline and set the Final Connection for the tag. (Lgx00165885)

Compiler error after converting a v23 project to v27 project using a 5x80 controller (Lgx00172653)

Corrected Anomaly with Studio 5000 Logix Designer v28

Converted a project from version 23 of the Logix Designer application using a 5x70 controller to version 27 of the Logix Designer application using a 5x80 controller causes a compiler error. (Lgx00172653)

Compiler error in routines in a project with more than 900 programs (Lgx00164592)

Corrected Anomaly with Studio 5000 Logix Designer v28

In a project that contains more than 900 programs, a compiler error occurs in the routines after the applications has compiled more than 900 of the programs. (Lgx00164592)

Deletion of parent module while adding child results in a fatal error (Lgx00162842)

Anomaly

Studio 5000 Logix Designer v26

Anomaly corrected in Studio 5000 Logix Designer v28

When deleting a CN2 or EN2T module while adding a child to the module causes a fatal error instead of the "Failed to create module. Parent module no longer exists." error.

Descriptions for tags are deleted when using Point I/O module (Lgx00174779)

Corrected Anomaly with Studio 5000 Logix Designer v28

In version 27 of the the Logix Designer application, if a Point I/O module is used when adding descriptions to the Controller Tags created for those modules, if the chassis size is changed in the 1734-AENTR module, then the descriptions for the tags are deleted. (Lgx00174779)

Failed to create new module when creating PowerFlex drives online (Lgx00162640)

Corrected Anomaly with Studio 5000 Logix Designer v28

Receive an error message of: "Failed to create new module. Child module incompatible with parent module." when attempting to create PowerFlex drives online in version 24 and later. (Lgx00162640)

Fatal error after clicking the Program Schedule tab (Lgx00165002)

Anomaly

Studio 5000 Logix Designer v26

Anomaly corrected in Studio 5000 Logix Designer v28

When editing a Logix Designer project offline, clicking the **Program Schedule** tab in the **Event Task** dialog box while the Tag Monitor is opened causes a fatal error.

Fatal error converting project to Logix Designer v24 that has trend pen referencing deleted member of a User-Defined data type (Lgx00163747)

Corrected Anomaly with Studio 5000 Logix Designer v28

A version 21 project of the Logix Designer application that has a trend pen that references a deleted member of a User-Defined data type causes a fatal error when attempting to convert to version 24 of the Logix Designer application. (Lgx00163747)

Fatal error converting project to Logix Designer v24 with Trend pen of an alias tag (Lgx00162387)

Corrected Anomaly with Studio 5000 Logix Designer v28

If a Trend is created in a project of Logix Designer application that is earlier than version 24, and the Trend has a trend pen of an alias tag whose base tag has been deleted, causing the trended alias tag to be unverified, converting the project to version 24 of the Logix Designer application causes a fatal error in version 24 of the Logix Designer application. (Lgx00162387)

Fatal error occurs when adding alarms to a Function Block Diagram when online (Lgx00167922)

Anomaly

Studio 5000 Logix Designer v27.00

Anomaly correct in Studio 5000 Logix Designer v28

A fatal error can occur when you add alarms to a Function Block Diagram when online with the controller. As a workaround, add the alarms while offline. (Lgx00167922)

Forced message is missing when Force Detection is enabled and Monitoring Tag (Lgx00163517)

Anomaly

Studio 5000 Logix Designer v27.00

Anomaly correct in Studio 5000 Logix Designer v28

Minimum Reproduction Steps

1. In the Workstation Options dialog box, on the Tag Editor/Data Monitor tab, select the Enable I/O Force Detection check box.

2. Establish a force mask on any data on a module I/O tag.

3. Open the Tag Monitor window that has a tag (or alias to a tag) with forces.

Expected Results

During download, warning messages are shown for each force established. For example:

• Warning: Tag "Local:1:I": Force detected."

• Warning: Tag "Local:2:I": Force detected."

Actual Result

The presence of an opened Tag Monitor window suppresses the warnings for tag forces.

Tip: During a Verify Controller operation, you will see the warnings for forces that are present.

This anomaly is only during the indication during a download verify.

(Lgx00163517)

Logix Designer sometimes freezes when renaming input tags in AOIs (Lgx00168629)

Anomaly

Studio 5000 Logix Designer v27.00

Anomaly corrected in Studio 5000 Logix Designer v28

The Logix Designer application sometimes freezes and must be restarted when you rename an input parameter tag in an Add-On Instruction. (x168629)

Math status flags in structured text routines block project download to ControlLogix 5570 controllers (Lgx00169037)

Anomaly

Studio 5000 Logix Designer v27.00

Anomaly corrected in Studio 5000 Logix Designer v28

In version 27 of the Logix Designer application, project downloads fail for ControlLogix 5570 controllers for projects that contain math status flags in structured text routines. (Lgx00169037)

One 2715 HMI PanelView allowed per Logix Designer project (Lgx00167397)

Anomaly

Studio 5000 Logix Designer v27.00

Anomaly corrected in Studio 5000 Logix Designer v28

Rockwell recommends limiting the number of 2715 HMI PanelViews to one per Logix Designer project. (Lgx00167397)

Output Cam editor with UDT alias causes a crash when you click Apply (Lgx00161890, Lgx00164414)

Anomaly

Studio 5000 Logix Designer v26

Anomaly corrected with Studio 5000 Logix Designer v28

When using the Output CAM Editor to make changes to an Output CAM that contains an Alias Tag, you will get a fatal error when you click **Apply** within the editor. The work around is to use the direct address for the Output CAM operand of the MAOC rather than the alias tag.

Before / After
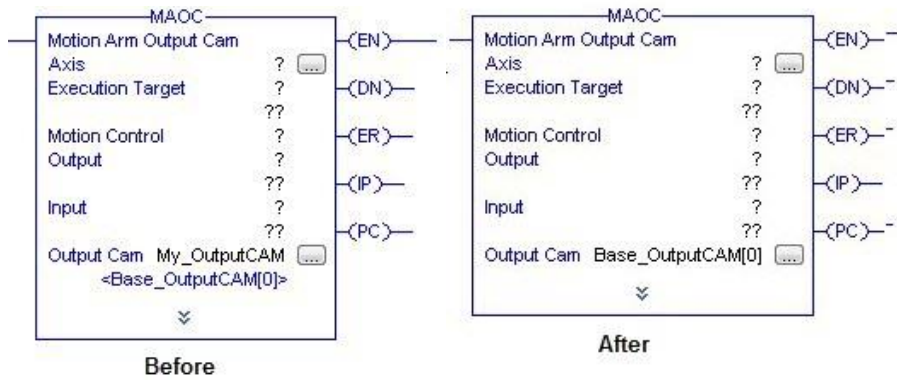
Preset and Accum values are not overwritten during import (Lgx00165936)

Anomaly

Studio 5000 Logix Designer v27.00

Anomaly corrected in Studio 5000 Logix Designer v28

When you import a program, the Preset and Accum values are not overwritten, even when you select Overwrite as the Operation on the Import Configuration dialog box. As a workaround, import the program and change the Preset and Accum values after the import is complete. (Lgx00165936)

Properties dialog box contains errors for source-protected AOIs (Lgx00168180)

Anomaly

Studio 5000 Logix Designer v27.00

Anomaly corrected in Studio 5000 Logix Designer v28

When you open the Properties dialog box for an Add-On Instruction protected by Source Protection, the dialog box should display only the General tab, and "Source not available" should appear at the bottom of the dialog box. However, the Sheet Layout tab appears (though it cannot be selected), and no text appears at the bottom of the dialog box. (Lgx00168180)

Quick Watch list is not saved when Safety Signature is generated (Lgx00158872, Lgx00158849)
Corrected Anomaly with Studio 5000 Logix Designer v28, v24.02

The Quick Watch list will not save when a Safety Signature is generated. No error message is shown. This behavior occurs when the controller is either offline and online. (Lgx00158872, Lgx00158849)

Known Anomalies

This release has the following known anomalies.

Rungs missing in routine after online edit with Logix Designer (Lgx00196898, Lgx00200753, Lgx00201030)

Anomaly first identified in Studio 5000 Logix Designer v28

Studio 5000 Logix Designer v28, v29, v30

Corrected Anomaly in Studio 5000 Logix Designer v30.01, v28.03

If online changes are made to a ladder logic routine within a ControlLogix 5580 or CompactLogix 5380 controller and those changes are assembled or tested, and subsequently removed, all rungs within the routine may be removed when the **Go Online** command in Logix Designer application is used to initiate the edit.

The rungs appear as missing within the Logix Designer editor. Controller projects that have been online edited continue to operate as expected until the **Go Online** command is used and a subsequent download of the resulting project file is performed.

All of the following conditions must be met for this anomaly to occur:

- The routine must have been created using the Logix Designer ladder logic editor.
- Online edits occurred and edits have been assembled or tested.
- Edits made to a ladder routine have been removed through a cancel operation or re-editing the routine to back out changes that have been made such that the resulting routine has not changed.
- Open a file in Studio 5000 Logix Designer application that does not have the changes and use the **Go Online** command to connect to the edited controller, forcing correlation of the online version with the offline version.

If these conditions are met, when the affected routine is opened in the Logix Designer ladder logic editor, all rungs within that routine are missing and the number of rungs reported by the Controller Organization within Logix Designer is zero. If the affected routine is opened an empty rung is added and project validation fails. However, if the affected routine is not opened, project validation will pass and allow download of the application to the controller with the affected routine now missing all rungs within the controller.

Important - The rungs appear as missing within the Logix Designer ladder editor, but controller projects that have been online edited continue to operate as expected within the controller until downloaded.

For complete information, see Knowledgebase article 1063358: [Product Notice 2017-10-002 Logix Designer Ladder Logic Editor Missing All Rungs in a Routine when Online with Correlation after Online Edits are removed in ControlLogix 5580 and CompactLogix 5380](#).

Functional Changes

This release has the following functional changes from the previous release.

Functional Changes Changes in this release for Studio 5000 Logix Designer version 28.00

The following items explain changes that have been made in this or earlier releases in the way that the Logix Designer application works, compared to earlier releases.

Adobe Flash Player ActiveX Control

Starting with version 28 of Studio 5000 Logix Designer, the Adobe Flash Player ActiveX Control will need to be installed manually from the Adobe website.

The Adobe Flash Player ActiveX Control can be downloaded from Adobe's website at: http://get.adobe.com/flashplayer/

Note:	For Windows 8 (and later), the Start Page will work because those versions of Windows have flash integrated.

Sequence Manager changed how the Equipment Phase program supports Pause, Auto Pause and Resume functionality

These changes include:

- The Equipment Phase backing tag. If there is code that references a phase's pause control word, the compiler will flag those references as errors.
- How Equipment Phase logic is paused, auto paused, and resumed
- The appearance of the Equipment Phase Monitor
- How an existing project that references Equipment Phase Program pauses data imported into version 28.

Sequence Manager changed the Equipment Phase Monitor

The appearance of the Equipment Phase Monitor has been updated as part of Sequence Manager:

- The command symbols used in the Command Bar of the Equipment Sequence Diagram Monitor have been added to the Phase Monitor.
- The Pause functionality of the Equipment Phase has been redesigned and simplified.
  - Pause and AutoPause buttons toggle enabled or disabled.
  - The Resume button is only enabled when the Equipment Phase is Paused.
  - A single state box is filled when the phase is Paused or unfilled when not-paused.

Project Export permission will affect the ability to cut, copy, and drag-n-drop out of version 28

If FactoryTalk Security is being used, users now require the "Project Export" permission in order to copy a component onto the clipboard or to drag and drop a component from one project into another.

No backward controller morphing for 5x80 family of controllers

In version 28 of Studio 5000 Logix Designer, an existing project can be converted to use the 5x80 family of controllers. However, once a project is converted to use a 5x80 controller, the project cannot be reverted back to use the previous controller type by using the **Controller Properties** dialog box **Change Controller** option. The original controller for the project will not be a controller type option in the **Change Controller** dialog box drop down menu.If a project needs to be reverted back to the previous family of the controller, the project will need to be exported to an .L5k or .L5x file format and then manually modified. Refer to the Logix5000 Controllers Import/Export Reference Manual, publication1756-RM084 for more information about modification of the controller type.

Controller Memory Changes

This revision of Logix5000 controllers may require more memory than earlier revisions. To estimate additional memory requirements for your application, you can either use the memory estimation tool provided with Logix Designer application or the tables provided in these release notes.

- Before upgrading to this revision, check the amount of unused memory that you have in the controller.
- For additional information about controller memory issues refer to the Knowledgebase at: http://www.rockwellautomation.com/support/.

For the 5x80 family of controllers, the Memory tab in the Module Properties dialog box has been redesigned to show the size of the source code of your application rather than the physical memory the application uses to run. As a result, a new term 'block' has been defined that represents a unit of executable code.

For more information on migrating to a 5x80 controller, refer to the publication on the Literature Library, Replacement Guidelines: ControlLogix 5560/5570 Controller to ControlLogix 5580 Controller (1756-RM100).

For the 5x80 family of controllers, the Memory tab in the Module Properties dialog box has been redesigned to show the size of the source code of your application rather than the physical memory the application uses to run. As a result, a new term 'block' has been defined which represents a unit of executable code.

The block units are only used for application source code sizes. Data structures and messages are still sized in bytes to support the design and implementation of communication interfaces with other devices.

To use the memory estimation tool to estimate the amount of controller memory your project requires for I/O, Data, and Logic, convert the project to the controller revision desired and then use the Estimate tool available on the **Memory** tab of the **Controller Properties** dialog box.

Behavior changes in 5x70 family of Logix controllers

This release includes the following behavior changes for 5x70 family of Logix controllers.

- REAL operands are not allowed in array subscripts.
- Ladder logic does not allow bitwise arithmetic (for example, AND) for REAL operands.
- The nesting or invocation limit for Add-on instructions (AOIs) and Jump to Subroutine (JSR) instructions is set at 25.
  - For AOIs, the limit for InOut parameters is 40.
  - For JSRs, the limit for In parameters and Out parameters is 40.
- An MCR instruction must be the last instruction in a rung.
- A Math Status Flag Consumer (XIC or XIO instructions with S:V, S:C, S:N, or S:Z as operands) must be preceded by at least one Math Status Flag Producer from the same rung.
- Mat Status Flags are not supported in non-RLL languages.
- All rungs must be verified for Routine-level accepts.

Import/Export Changes

Import/Export Formats – Logix Designer application provides the following five different Import/Export file formats:

- Full project exported to an ASCII text file (.L5K)

- Full project exported to an Extensible Markup Language (XML) formatted file (.L5X)
- Tag definitions and program documentation exported to ASCII text files in a Comma Separated Value (.CSV) format

Tip:	For the v24.00, v26.00 and v27.00 releases, program parameter connections are not included in the .CSV file.

- Tag definitions and program documentation exported to ASCII text files in a Tab Separated Value (.TXT) format
- Partial project exported to an Extensible Markup Language (XML) formatted file (.L5X)

Each of these formats is documented in Logix5000 Controllers Import/Export Reference Manual, publication 1756-RM084, which also describes modifications that can be made for backward compatibility of export format files.

Import/Export Major and Minor Revision – Beginning with the version 9.00 release, the Import/Export version number is interpreted as a Major Revision and a Minor Revision (major.minor). Each version of Logix Designer application exports *.L5K files with specific IE Version numbers. Logix Designer application imports any *.L5K file with the same Major Revision number and the same or lower Minor Revision number. The Major Revision is incremented when there is a significant change that affects compatibility with earlier versions. The Minor Revision is incremented whenever there is a change in the file format (for example, a new module, an attribute is added, or the set of options for an attribute is changed). Generally, the Minor Revision is incremented for each release.

The Import/Export version number for this version of Logix Designer application has been changed. If you export files (*.L5K) that were created in versions of RSLogix 5000 software with an Import/Export version number less than 2, and you attempt to import them in the latest version of the application, an error is generated. The error message is "Failed to open file *.L5K. Syntax error found while scanning the Import file." To work around the anomaly, edit the *.L5K file and change the line IE_VER := x.x;, where x.x may be 1.0, 1.1, or 1.2 to IE_VER := 2.11;, save the file and retry the import.

Release Version	Import/Export Version
28.xx	2.19
27.xx	2.18
26.xx	2.17
24.xx	2.15
23.xx	2.14
21.xx	2.12
20.xx	2.11
19.xx	2.10
18.xx	2.9
17.xx	2.8
16.xx	2.7
15.xx	2.6
14.xx	2.5
13.xx	2.4
12.xx	2.3
11.xx	2.2

10.xx	2.1
9.00	2.0
5.02	1.2
2.xx, 6.xx, 7.xx, 8.xx	1.1
1.21, 1.23	1.0
1.10, 1.11	0.4

Import or Paste Error Messages – When attempting to import or paste between versions, if the IE version is invalid, an error message is displayed in the results window. If the major or minor revision number is larger than accepted, the message "Error Line xxx: Invalid IE Version number. Cannot import/paste into older version of RSLogix 5000" is displayed. If the major revision number is smaller than accepted, the message "Error Line xxx: Invalid IE Version number. See Release Notes for more detail" is displayed.

Import/Export Format for Structured Text Routines – The Import/Export format for Structured Text routines was changed in version 12. The STX_ROUTINE and END_STX_ROUTINE delimiters were changed to ST_ROUTINE and END_ST_ROUTINE, respectively. Version 12 or later of the application continues to recognize the obsolete STX_ROUTINE when importing, but exports using the new format. Any attempt to Copy/Paste, Drag/Drop, or Import a version 12 or later Structured Text routine into version 11 software will fail.

Online Editing Views for SFC and ST – With the addition of online editing for SFC and ST in version 13, new LOGIC and END_LOGIC delimiters were added to identify Original, Pending Edits, and Test Edits views in the export file for the SFC and ST languages. These new delimiters are not recognized in older versions of RSLogix 5000 software, so version 13 or later generated .L5K files with SFC or ST online edits should not be imported into versions earlier than version 13.

Data Types and Keywords – If you are importing an older version project (earlier than version 11) you may get the error message "An error occurred while creating DATATYPE xxxx (One or more arguments invalid.)" for some user-defined data types. The likely cause of this error is the use of reserved keywords introduced in version 11 as data type names. Normally, user-defined data types that use keywords are renamed by appending a numeral. If an undefined data type is nested within another data type, it may be that the undefined data type uses a reserved keyword name and causes the error. To work around this anomaly, rename any undefined data types to non-keyword names.

Motion Axis Tags and Axis Object Attributes – In addition to the Import/Export changes described above, there have been many changes to motion axis tags and axis object attributes that result in warning messages when importing older version *.L5K files. These warning messages are in the format:

Warning: Line ###: An error occurred while setting attribute <name_of_attribute> of tag <name_of_axis_tag> (Couldn't be found).

The same type of warning message is displayed if you import objects that previously accepted NA as values. In this release, the not applicable values are exported as <NA>.

Changes to applications installed with Studio 5000

In this release, the **PLC-5/SLC translator tool** has been renamed. It is now called the **RSLogix Project Migrator**. The tool converts RSLogix 5 and RSLogix 500 projects into .L5K files that you can import into Logix Designer. It includes the following enhancements:

- Improved handling of symbol and comment truncation.

- Improved SLC I/O migration.
- Ability to migrate MicroLogix projects.

Functional Changes Enhancements in this release for Studio 5000 Logix Designer version 28.00

The following enhancements to existing features have been made in this release of the Logix Designer application:

- Added a workstation option for the Structured Text Editor to allow users to automatically insert a user configurable Comment header within a Structured Text routine. This new functionality can be enabled and disabled. (Lgx00175121)
- Added a warning to notify users if a JSR command was not found for a routine. (Lgx00091372)
- Navigation between the Controller Organizer and the Logical Organizer, and vice versa, has been enhanced so that it is now easy to locate the same programs and routines when you navigate between the two organizers. (Lgx00169794)
- Program Parameter Connections are now part of the .CSV Export file for Parameter and Tags. (Lgx00152507, Lgx00152491)

Importing a UDT with an updated member list

Software Enhancement

Studio 5000 Logix Designer version 21.00

Importing a User Defined Data Type (UDT) with an updated member list can change instruction tag references for existing or imported logic. In the **Import Configuration** dialog box, an icon appears next to each affected UDT.

Refer to the 1756-PM019 Logix 5000 Controllers Import/Export Project Components Programming Manual and the Logix Designer online help for more information.

Application Notes

This release has the following application notes.

Application notes for Studio 5000 Logix Designer version 28

The following are the application notes for the Logix Designer application.

Logix Designer application

The following information is provided to help you better understand the behavior of the Logix Designer application in other applications or under certain circumstances.

Configuring Equipment Sequence programs to generate events imposes constraints on the sequence

A limited number of events that report updates to input and output parameters of data type STRING can be generated at the same time.This affects the generation of events:

- Recording initial values of sequencing parameters
- Recording step input data passed from a sequence to a phase
- Recording phase output data passed from a phase to a sequence
- Recording sequence output parameters updating

When using sequence events, keep these recommendations in mind:

- Equipment Phases and Equipment Sequence should be run in periodic, and not continuous, tasks.
- Set the scan rate of the Equipment Sequence to be faster than the time required for an Equipment Phase to run its state routine logic (not the scan rate, but the time a phase spends executing it's Running, Holding, Aborting, Stopping, or Resetting state routines).
- The phase changes states faster than the scan rate of the equipment sequence program.
- Generating events will constrain the performance of an equipment sequence.Only generate events when records for executing the sequence are required.
- Under rare and extreme conditions, the controller will not accept an operator command if an event to record the command cannot be generated.The Abort command always succeeds. But under the same conditions, is not recorded with an event.
- Sequence event generation can be affected by Avoid generating more than 60 events and alarms combined per second.Describe different ways that multiple events can be generated simultaneously.

Sequence Manager Applications access to Equipment Sequence data from outside the controller.

- FactoryTalk View Site Edition (SE) restricts the number of simultaneous clients connected to a controller to 50.
- The Sequence Manager Controls should not use VBA to unnecessarily request a refresh of cached sequence configuration data as the refresh blocks client applications from commanding sequences until the refresh is complete.
- It is recommended that the user configure a second Event Client service that subscribes redundantly to generate sequence event data through its own RSLinx Classic service.This ensures losing communications between the Client Service and the controller does not result in a loss of cached event data.

Boundary Clock with NTP enabled can cause unwanted, or no motion on a CIP axis

Improper startup synchronization between the ControlLogix or CompactLogix processors, and PowerFlex or Kinetix CIP Motion Enabled Drive may result in movement when none is expected, or lack of movement when movement is expected (sleep mode). In the case of unexpected movement, a Drive Fault with Excessive Position Error is issued. While this is not a common occurrence, the possibility of unexpected motion or lack of motion does exist. (Lgx00173808)

Renamed tags appear in ViewE terminals only after download, power cycle, or terminal program re-deploy

View Designer terminals do not primarily link to Logix Designer tags by name. After you rename a tag in the Logix Designer application, View Designer terminals continue to read and write the tag based on an internal link with the tag until you download the project, power cycle the controller or terminal, or re-deploy the HMI terminal program. After one of these events the HMI attempts to link to the tag using its

name to re-establish the connection. Proper procedures have to be followed after renaming a tag to propagate that change to all HMI terminals. (Lgx00126869)

MAOC with 1756-OB16IEFS scheduled Output Pulses wrong

Occasionally, the interpolated reg position of an axis will be out of tolerance. For example, the interpolated reg position of the axis should be around .45 revs, but will sometimes show up as .54 revs. The amount that it is off is consistent. During the 1000 rev move, about 120 will be wrong. The values that are right are very accurate. The values that are wrong are consistently off by the same amount.

The workaround is for most cases is to set the RPI of the O1756-B16IEFS faster than the motion group update time. This will allow the normal sending of data at the RPI to retry the previous schedule(s) before a new set of schedules are created.

This workaround cannot cover all cases because a new schedule may be set to expire before the modules RPI can perform the retry. In those cases, the 1756-OB16IEFS will do it's normal Late Schedule processing and update the Schedule Status and LateScheduleCount in the input tag.

Logix Designer shuts down when WIBU detects malicious debugger

When WIBU AxProtector detects a potentially malicious debugger application, Logix Designer shuts down. As a workaround, disable debugging applications that are running on your computer and restart Logix Designer. (Lgx00165361)

Wibu-System CodeMeter installed with Logix Designer

The Wibu-System CodeMeter® suite of applications is installed with Logix Designer application to add resiliency to Logix Designer projects. CodeMeter is typically installed in the C:\Program Files (x86)\CodeMeter folder and the CodeMeter icon may appear on the desktop or in the Windows taskbar.

Important:	Disabling the CodeMeter service or uninstalling the application disables Logix Designer application.

Refer to the Wibu-Systems website for specific information about CodeMeter.

Unable to use Logix Designer to flash firmware if controller contains a new license

When the controller contains firmware that has revoked the licensed connection key for older revisions of software, those older revisions of software cannot establish a connection with the controller in order to flash the controller back to a compatible revision of firmware. Errors include "Unable to establish a licensed session with the device" and "Attribute value not settable".

Use ControlFlash to downgrade the firmware. (Lgx00156630)

Upgrade requires reseal of validated Safety Add-On Instructions

When upgrading to Logix Designer application v23 or later, any Safety Add-On Instructions that are sealed with a signature in GuardLogix need to be resealed. (Lgx00156316)

Equipment Phase parameter alias change

In Logix Designer application versions 21 and earlier, Equipment Phase parameters were allowed to alias any in-scope tag. Starting in version 24, Equipment Phase parameters can only alias local, non-parameter tags.

Logix projects designed to work with both FactoryTalk Batch and a Logix internal sequencer program might fail verification when you upgrade to Logix Designer application version 24. You can use the following steps to modify projects with input and output parameter tags (required for FactoryTalk Batch interoperation) that use aliases.

For projects that fail verification, the following errors appear in the errors tab.

Error: Parameter '\T200_Heat.SetPoint_P01': Input and Output parameters cannot alias global tags.

Error: Parameter '\T200_Heat.Temperature_PV': Input and Output parameters cannot alias global tags.

There are two options for resolving the verification errors.

Method 1:

1. Create a new public parameter tag to represent the internal sequencing program parameter.

   - Set the **Alias For** field of this tag to the same value that was specified in the **Alias For** field of the unverified Input or Output parameter.
   - Set the **Data Type** field of this new tag to be the same as that of the unverified Input or Output parameter.

2. Remove the alias from the unverified Input or Output parameter tag and instead create a connection.

   - The connection is from the unverified Input or Output tag to the newly created Public parameter tag. Make sure the data types match for both ends of the connection.

3. Test your changes to ensure that your logic continues to work as expected.

Method 2:

1. Remove the alias to the controller scope tag, from the unverified phase Input or Output parameter

2. If other programs or phases need to access the value of this phase Input or Output parameter, create an InOut parameter in the other program with the connection set to the Input or Output parameter in the first phase.
3. Test your changes to ensure that your logic continues to work as expected.

Patch for FactoryTalk Batch

A patch is required for FactoryTalk Batch if you use the new sequencing parameters in version 24.00. You can find instructions on using the patch from the Rockwell Knowledge Base at this URL (login required):

https://rockwellautomation.custhelp.com/app/answers/detail/a_id/606383

You can download the patch at this URL (login required):

FactoryTalk Alarms and Events systems that use ALMA and ALMD instructions

Use FactoryTalk View Studio SE software, version 8 (CPR 9 SR 7.1), to link an application to a Logix Designer application that uses the ALMA or ALMD instructions. You must use FactoryTalk Alarms and Events server version.

Important:	This anomaly applies to the use of ALMA and ALMD instruction only. Tag-based alarming systems that use FactoryTalk Alarms and Events functionality work as expected with FactoryTalk View Studio SE software, version 6.

Note the following:

- Use FactoryTalk Alarm and Events services. Recommended version is View 8.0 (2.71 CPR 9 SR 7.1)
- The elements related to temporary alarm buffering that were available in pre-v21 releases were replaced with a permanent alarm log. Programming code that used these alarm elements require re-coding.
- Alarms and Events subscription is not supported by v21 and v23 controllers.
- New subscribers support both pre- and post-v24 models.

Install the most current version of FactoryTalk Activation

As a best practice to ensure optimal performance, install the most current version of FactoryTalk Activation on local and centralized activation servers. The most current version is available at the following URL:

http://www.rockwellautomation.com/support/

If you use a remote activation server, refer to the following publication for more information:

https://rockwellautomation.custhelp.com/app/answers/detail/a_id/612825

Overlap between input aliases and output aliases

Starting with version 24, the Logix Designer application supports Input and Output program parameters. If multiple input parameters are created as aliases to the same internal program tag, the Logix Designer application does not report verification errors for the overlap. Similarly, if Output connections are connected to alias tags that alias the same base tag, an overlap error is not reported. To avoid unpredictable results, do not create multiple input parameters that alias the same local tag, or multiple Output parameters from the same program that are connected to aliases that reference the same base tag. (Lgx00148996)

Required to re-register EDS files after upgrading to version 20 or later of the application

If the product described by the EDS file is to be used in the I/O configuration using EDS AOP, any EDS files that have been registered for RSLogix 5000 software version 19 and earlier must be re-registered after the installation of RSLogix 5000 software version 20 or later.

Resources cannot be found in the Online Books section of the Start Page

The Release History and Vendor Sample Project .pdf file will not display until http://localhost is added to the list of Trusted Sites in Internet Explorer.

Download Project Documentation and Extended Properties

To include or exclude project documentation and extended properties from a downloaded project, select or clear the **Download Project Documentation and Extended Properties** check box on the **Controller Properties dialog box - Project tab**.

Downloading project documentation and extended properties to the controller can significantly increase the amount of time it takes to download a project, especially if a project is heavily documented.

Keep the following considerations in mind when you clear **Download Project Documentation and Extended Properties** check box and download the project to the controller:

- Risk losing project documentation, extended properties and custom properties from the project.
- If extended properties are used in program logic, the download fails. An error in the **Error** tab states that you cannot access extended properties in logic when extended properties are not downloaded.
- Attempting to add logic to a routine to access extended properties in logic generates an error in the **Error** tab. The error states that you cannot access extended properties in logic when the extended properties are not downloaded.
- Rung comments and Sequential Function Chart and Function Block Diagram text boxes no longer exist in the controller. Therefore, code comments are no longer synchronized among multiple online workstations.
  - During online editing of rungs, other workstations display only rung comments for rungs that exactly match the rung type for the comment in their offline database. For example, if Workstation 1 performs edits on a Normal rung, Workstation 2 will not display the rung comment while the rung is in any phase of editing or testing (for example, I/R pair). When the edits are assembled and the rung returns to a Normal rung, Workstation 2 will again display its rung comment.
  - Performing online edits of any type on a Sequential Function Chart routine causes other workstations to lose their text box comments for that routine when the edits are accepted. For example, if Workstation 1 begins pending edits on a Sequential Function Chart routine and accepts those edits in any controller mode, when Workstation 2 processes those edits, all text boxes in the Sequential Function Chart routine will become blank, even if they were not modified as part of the edit. Canceling these edits will not restore the text box contents.
  - Performing online edits on a Function Block Diagram routine in Program mode causes other workstations to lose their text box comments for that routine when the edits are accepted. This is the same behavior described for Sequential Function Chart routines. In Run mode, the contents are not lost when pending edits are accepted. They essentially become test edits, and will not be lost until those test edits are subsequently assembled. As in Sequential Function Chart routines, canceling these edits will not restore the text box contents.

Download duration is slow for certain projects

Storing your project comments and tag descriptions in the controller increases upload/download times.

Be aware of the following:

- If you click the Cancel dialog box during the Finalize portion of the download process, the download process continues to successful completion and you may not be able to access the controller for as long as 10 minutes.
- If the Finalizing portion of the download process takes longer than 10 minutes, the controller can generate a Major Non-recoverable fault (MNRF).

To work around this restriction, clear the **Download Project Documentation and Extended Properties** check box when downloading the project.

Important:	Be aware that a restriction applies to clearing the **Download Project Documentation and Extended Properties** check box in a multi-workstation development application.

(Lgx00135928)

Out-of-Box CIP Axis Position Loop Gain values adjusted with Load Observer

With the introduction of the CIP Motion Load Observer enhancement in version 19 of RSLogix 5000 software, the out-of-box calculations for several CIP Axis attributes were impacted. In particular, the Position Loop Bandwidth attribute and the Position Error Tolerance attribute will be automatically adjusted when the Load Coupling is change from Rigid to Compliant and Use Load Ratio is enabled.

When a change to the Load Coupling is applied, the out-of-box Position Loop Bandwidth will be reduced by 90% and the out-of-box Position Error Tolerance will be increased by 90%. This has the effect of loosening the out-of-box Position Gains so that the Motion Load Observer loop response can be tightened.

Time Synchronization replaces CST Time Mastership

RSLogix 5000 software version 18 has replaced the concept of Coordinated System Time (CST) Mastership with the more comprehensive notion of Time Synchronization, also referred to as CIP Sync Time Coordination. The Date/Time page of the controller properties has been modified to reflect this change.

For projects created with RSLogix 5000 software version 17 or earlier, if Coordinated System Time Master (CST) is enabled, then the converted project has the Time Synchronization setting enabled. For more information about time synchronization using CIP Sync Time Coordination, refer to the Integrated Architecture and CIP Sync Configuration Application Technique, publication IA-AT003.

CIP Generic writes to controller objects that originate from another controller failing

In RSLogix 5000 software version 20, there are enhanced security restrictions to controller CIP objects. Because of this, some CIP Generic messages that are used to write directly to controller object attributes sometimes do not function. Any CIP generic object write that originates external to the controller sometimes fail in version 20 or later of the application. CIP Generic writes that are executed in the controller's own user program will operate normally.

Cannot create, view, or edit modules based on Classic Profile after McAfee QuickClean

McAfee virus software version 8.0 ships with a Quick Registry Cleaner component that cleans the registry on a periodic basis. Upon cleaning the registry, the McAfee software removes all existence of

the application's classic profiles from the registry. Once this has occurred, you can no longer create, view, or edit any classic profile based module.

This anomaly will also prevent the creation and importing of projects. When this condition is encountered, it is necessary to uninstall and reinstall the application. A way to avoid the anomaly is to remove the registry cleaner from any QuickClean manual and scheduled scans or delete all scheduled QuickClean tasks from the McAfee SecurityCenter UI. (Lgx00081691)

Unknown URL attempting to access Online Books or Vendor Sample Projects from Start Page

If your personal computer is not configured as part of a domain, you sometimes receive the error message "Unknown URL" when attempting to access Online Books or Vendor Sample Projects from the Start Page. This is the result of security enhancements to the Internet Explorer browser.

If Logix Designer application was installed by using the default installation path, the Online Books can be accessed from links provided in pdf files in **C:\Program Files (x86)\Rockwell Software\RSLogix 5000\Common\<language>\Start Page\Docs**. The Vendor Sample Projects can be accessed from links provided in the file **C:\Users\Public\Documents\Studio 5000\Samples\<language>\<version>\Third Party Products\Vendor Sample Projects.pdf**.

Access to Online Books and Vendor Sample Projects can be allowed by adding *localhost t*o the allowed Local Internet sites. (Lgx00089165)

Function Block Diagram (FBD) ActiveX Faceplates not compatible with Windows Vista or later

The FBD ActiveX faceplates are not compatible with Microsoft Windows Vista or later operating systems. Instead, use FactoryTalk View SE/ME FBD Global Objects, available with FactoryTalk View SE/ME software version 5.1 or later.

Overflow checking improved for Immediate Operand values

In RSLogix 5000 software version 20, overflow checking for immediate operand values has been extended to all radix formats. Earlier versions of RSLogix 5000 software checked Octal values (that is, 8#nnn) for overflow into a 32-bit integer. Starting with RSLogix 5000 software version 20, immediate operand values of any integer-type radix (Hexadecimal, Decimal, Octal, or Binary) are checked for overflow into a 32-bit integer. The overflow conditions are indicated as errors during the verification process. (Lgx00116816)

Kinetix 6200 S0 and S1 Safety Drive with Digital Inputs configuration

The hardwired digital inputs on the Kinetix 6200 S0 Enhanced Safe Torque-off Drive and S1 Advanced Safety Drive are now populated via 4 hardwired connections representing 7 selectable inputs. With the introduction of these profiles in version 17 of RSLogix 5000 software, users must develop application logic to map these inputs. This must be done via the MSG command, Read_IDN, Write_IDN to SERCOS Identification Number P-0-52, 53, 54, and 55. This data must be rewritten at each power-up of the SERCOS Ring. The user's application must be written to make proper use of these digital inputs within the context of the associated motion instructions.

Versions 18 and later require updates to Custom Motion Database

If you currently use a Custom RSLogix 5000 Motion Database in RSLogix 5000 software version 12 through 17, you need an updated motion database to work with versions 18 or later. The following table lists the motion database revisions that are used with these application versions.

* Before a Custom Motor can be used in version 18 or later, any Custom Motor currently in a motion database file at revision 5 or earlier (Motion.db format) must be converted to the newer Motion.mdb format.

To initiate the process of getting the database updated, please email your request to **raeptechsupport@ra.rockwell.com**. Please include any prior tech support case number if your current database includes non-Rockwell motors.

Superimposed motion shifts path

Beginning with RSLogix 5000 software version 20, the superimposed motion behavior has changed. In Absolute mode, when Superimposed mode is programmed, the path is shifted by the superimposed motion, except for moves in the following conditions: (1) Sequence of moves using any termination type other than TT0 or TT1, (2) a merge, or (3) when the queue becomes empty.

This change allows for the capability of any path that is drawn on a table moving in either the X or Y direction as a result of superimposed motion to look exactly the same as if it were drawn on a stationary table. In RSLogix 5000 software version 19, the path was not shifted when Superimposed mode is programmed and this was not achievable. (Lgx00122482)

Enhancements to Motion Planner may affect motion profiles

The performance of the Rockwell Automation Integrated Motion's motion planner has been improved in the controller firmware associated with version 16.03 of RSLogix 5000 software. As a consequence, there can be minor differences in the velocity profile and the path profiles in some blended and merged moves. The majority of these minor differences manifest themselves in velocity limited moves and in moves programmed using an S-curve velocity profile. There can also be minor differences in Trapezoidal velocity profiles. Please refer to the [Motion Planner, Version 16.03 Application Solution](), publication [RA-AP031](), for additional details.

SFCRESTART attribute removed for GSV/SSV

In version 16, the SFCRESTART attribute has been removed from the PROGRAM class for the GSV and SSV instructions. This attribute was not used in earlier versions of Logix5000, and it will now report a verification error if present.

Ramp/Soak (RMPS) results appear to be in error

Due to the operation of single precision floating point arithmetic processing in the controller, intermediate results shown in the Soak time left of the Ramp/Soak (RMPS) instruction may appear to be inaccurate during the execution of the instruction. This does not cause improper execution of the instruction. (Lgx00072583)

Opening pre-version 17 project with Axis and Axis Performance Verification

Some motor parameter value settings have been changed in the version 17 Motion Database for the following motor types:

- MPL-A
- MPL-B
- 8720SM-xxxS
- TLY-A110T-Hxx

A project created in a version earlier than version 17 of RSLogix 5000 software that contains an AXIS_SERVO_DRIVE type axis configured with one of these motors will have its related axis parameters converted when opened in version 17 of RSLogix 5000 software. When this occurs, the following warning message will be displayed: "Axis <tag_name> Warning: Parameters for the associated motor have changed, which may have caused changes to some axis parameters. Please verify the axis performance."

When this warning is encountered, you should verify that the axis parameters pertaining to rated current are configured for proper axis operation. You should also validate that the axis is properly configured for your application. As an alternative, you can re-associate the motor to the axis, but in this case, all motor parameters will be reset to default motion database values, canceling any previously tuned and saved non-default axis values.

File import of Axis with MPx motors and Axis Performance Verification

In the Motion Database earlier than version 16 of RSLogix 5000 software, the Maximum Rated Current (I-rated) value for certain MPF, MPG, MPL, and TL motors were defined with settings from 1% to 7% higher than rated. If a project created in version 15 or earlier contains an AXIS_SERVE_DRIVE type axis configured with one of these motors, then when this project is imported (.L5K format project file) into RSLogix 5000 software version 16, the following warning will be generated: "Warning: During conversion of Axis <tag name> – Parameters for the associated motor have change, which may have caused changes to some axis parameters. Please verify the axis performance."

When this warning is encountered, you should verify that the Axis Parameters pertaining to Rated Current are configured for proper axis operation. As an alternative, you can re-associate the motor to the axis, but in this case, all motor parameters will be reset to default Motion database values, canceling many previously tuned and saved axis values.

This issue does not exist with database conversion of an .ACD format project file. The motors that are affected are:

- MPF-B310P
- -B320P
- -B330P
- -B4430K
- MPG-A004-031
- -A110-031
- -A11-0-091
- MPL-A310F
- -A430P
- -B420P
- -B4520P
- -B4530F
- -B4530K
- -B580J
- -B980L
- TL-A120P-H
- -A130P-H
- -A220P-H
- A230P-H

LINT time stamp values not shown with FactoryTalk View SE

A new 64-bit Long INTeger data type (LINT) was introduced in version 16 of RSLogix 5000 software. This data type is currently used only for date and time stamps for the analog and digital alarm instructions (ALMA and ALMD). In the CPR 9 release of FactoryTalk View SE, these LINT time stamp values can be seen only on the Alarm Summary, Alarm Banner, and Alarm Log. LINT time stamps cannot be seen on custom FactoryTalk View SE graphics. Support of LINT time stamp values on custom graphics will be added to a future release of FactoryTalk SE.

LINT members must align on 8-byte boundaries

Beginning with version 25 of the Logix Designer application, LINT members must be aligned on 8-byte boundaries, and the UDT that contains LINT members should be sized as a multiple of 8 bytes. This impacts you if either of the following situations are true:

- You use this tag as a producer, and at least one consumer (controller) has firmware earlier than version 25.
- You use this tag as a consumer, and the producer (controller) has firmware earlier than version 25.

If you use a tag with LINT members as a producer (Source Tag), for each consumer (controller) that has firmware earlier than version 25, you need to align the LINT members on the 8-byte boundary for the data type of the consumer tag (Target Tag).

If you use a tag with LINT members as a consumer (Target Tag), for the producer (controller) that has firmware earlier than version 25, you need to align the LINT members on the 8-byte boundary for the data type of the producer tag (Source Tag).

For more information, refer to the following topic in the Logix Designer online help:

LINT data types within this tag now align on 8-byte boundaries. Check produce/consume connection.

(Lgx00167772)

Controller time object changed in version 16

The Controller time object was modified in version 16 of RSLogix 5000 software to support future alarms and events functionality. Time stamps now use Universal Coordinated Time (UTC), also referred to as Greenwich Mean Time (GMT). If the logic in your application reads or sets the controller clock by using the GSV/SSV attribute DateTime, then this logic should be updated to use the new attribute *LocalDateTime*. You may also need to make other modifications to your application as a result of this change. (Lgx00072073, Lgx00072238)

Firmware update required for 1734 and 1738 Ethernet Point adapters

When using a 1734-AENT or a 1738-AENT that is configured in one of the following two cases, you need to upgrade the firmware in the adapter module in order for both controllers to make a connection. The two scenarios are:

- Two Logix5000 revision 16 firmware controllers connected to one POINT output module. One controller connected as an owner, the other controller connected as a listener.
- Two Logix5000 controllers connected to one POINT output module. One controller is at Logix5000 revision 16. The other controller is at Logix5000 firmware revision 15 or earlier.

The required firmware for the 1734-AENT module is revision 2.003.4 or later, and the required firmware for the 1738-AENT module is revision 2.003.4 or later.

Use new Clock Update Tool with Logix5000 version 16 and later

Only revision 2.2.5 or later of this tool should be used with Logix5000 version 16 and later. Older revisions sometimes do not properly synchronize workstation time and controller time.

Non-Unicode character fonts

Rockwell Automation recommended that the Microsoft Windows operating system's Language for non-Unicode programs (System Locale) be configured to match the localized language. This is especially true for the Chinese, Japanese, and Korean editions. Not configuring the PC's operating system's System Locale to match the language of the application sometimes results in the inability of the application to show certain fonts.

If the Microsoft Windows operating system is not configured with the recommended System Locale, a warning will be displayed when the application is started. Clicking **Change** on this warning dialog box will navigate to the operating system dialog box from which you can adjust the System Locale.

The System Locale can then be changed by selecting a new **Language for non-Unicode programs (System Locale)** on the Advanced tab of the Regional and Language Options (accessed from Microsoft Windows Control Panel). For example, if you are running the Chinese version of the application (9324-RLD300ZHE), you should select **Chinese (PRC)** for the System Locale.

Extra digit of precision shown for REAL data type

The REAL data type now shows a 32-bit (4-byte) IEEE floating-point value with the following range:

- -3.40282347E38 to -1.17549435E-38 (negative values)
- 0
- 1.17549435E-38 to 3.40282347E38 (positive values)

The REAL data type also stores ±infinity, ±NAN, and -IND, but what the application shows differs based on the format.

Format:	Equivalent:	
Real	+infinite - infinite +NAN -NAN -indefinite	1.$ -1.$ 1.#QNAN -1.#QNAN -1.#IND
Exponential	+infinite - infinite +NAN -NAN -indefinite	1.#INF000e+000 -1.#INF000e+000 1.#QNAN00e+000 -1.#QNAN00e+000 -1.#IND0000e+000

The application also stores and shows the IEEE subnormal range:

- -1.17549421E-38 to -1.40129846E-45 (negative values)
- 1.40129846E-45 to 1.17549421E-38 (positive values)

Application appears to lock up when AssetCentre connection broken

If RSAudit message logging is enabled and the workstation is unable to connect to the FactoryTalk AssetCentre server to log messages, the Logix Designer application experiences intermittent freezes while it is waiting for the message requests to time out. This might cause the application to appear as though it has locked up, but if you wait about one minute, it will begin responding again.

To resolve this anomaly, either restore the connection to the FactoryTalk AssetCentre server or disable the RSAudit message logging. Once a connection has been restored, cached messages will be logged to the server and the application will resume normal operation. (Lgx00036127)

Save sometimes results in large project .ACD file

During a file save operation, the Logix Designer application attempts to compress the contents of a project so that the resulting file (.ACD) requires less disk space. When opening a project, this process is reversed and the contents of the .ACD file are de-compressed. In some instances, the application is not able to compress the information within the .ACD file.

In order to prevent the loss of project information, the Logix Designer application will perform the save without the compression. When this occurs, your .ACD file sometimes become abnormally large, but it is still usable. That is, you can continue to work with the file as you would normally.

Activation error running multiple versions simultaneously

If you have version 10.00 or later and also an earlier version of the application installed on your computer, you will observe an activation error if you run the version 10.00 or later version first and then attempt to run the earlier version simultaneously. To work around this anomaly, always run the earlier version first and then run the 10.00 or later version.

Phase Loss Fault-action for AM versus IAM on Kinetix 2000 & 6000 drives

With the new Phase Loss Fault-action, added in version 16, if the Integrated Axis Module (IAM) detects a phase loss fault, the motor attached to that IAM will respond with respect to the phase loss fault action setting as configured in the application without any user logic being written. However, if you expect the motor on the AM to perform in the same manner as does the IAM, a Kinetix Axis Module (AM) on the same power rail will require logic to be written.

This logic should monitor the IAM's phase loss status bit, and based on the value of this bit, cause the motor attached to the AM to respond in the same manner as the IAM in regards to axis and drive stopping action. The AM cannot have the Power Loss Fault-action configured; only the IAM can. For more detail see also Kinetix Drive Firmware Release Notes. (Lgx00071448, Lgx00071717)

Online disconnection after non-volatile store or load operation

When using any of the controllers with nonvolatile memory, the memory store and memory load operations will take between 30 seconds and approximately 3 minutes to complete. During these operations the Logix Designer application will be taken offline and will require you to manually reconnect.

Any other workstations connected to the controller will also be taken offline. If you performed a store operation, or a load operation where your project did not have any online changes, you will be able to go back online immediately and the project will need to be saved. If you performed a load operation,

and your project included online changes that you saved since the last store operation, you will be prompted to upload or download before going online.

Fatal error handling

There is a log file generated that records abnormal events and that can be delivered to Rockwell Automation Services & Support so that the anomaly can be recorded, diagnosed, and fixed. An abnormal termination of the Logix Designer application will result in a short period of program unresponsiveness followed by the appearance of a dialog box that identifies the fatal error. The dialog box contains specific details about the cause of the error. In addition, this information is appended to the file fatal error log file.

In order to more effectively address software error conditions, starting with version 15.00, the Fatal Error information is also stored in a file named RSLogix 5000 Fatal Error.Dmp. This file, containing the exact memory image at the time the error occurred, greatly extends our ability to determine the cause of the Fatal Error and to address product anomalies if those were the case. Due to the size of the dump file, special arrangements must be made in order for Technical Support to acquire these files. If it is not needed, the RSLogix 5000 Fatal Error.Dmp file can also be deleted.

These diagnostic files are now located in **C:\Users\Public\Public Documents\Rockwell Automation\RSLogix 5000\Logs** for the supported operating systems.

Multiple owners or listeners of 1756 analog modules
When using multiple owners or listeners of 1756 analog modules, set the Requested Packet Interval (RPI) for all connections to the same value. If different RPIs are used, connections sometimes will not recover correctly in a power-up situation.

RSLinx software with Logix Designer application for Studio 5000 Logix Designer version 28

The following information is provided to help you better understand the behavior of the Logix Designer application when used with RSLinx.

Data access control compatibility with RSLinx software

In version 18 and later of the application, there is an External Access tag attribute, which defines how an external application can access a tag. This functionality is fully supported by RSLinx Classic software version 2.56 and RSLinx Enterprise software version 5.21. Version 18 and later of the application can be used with earlier versions of RSLinx Classic software to go online to a controller; however, earlier versions of RSLinx Classic or RSLinx Enterprise software should not be used as a data server with a controller running firmware revision 18 or later. Unexpected results will be observed when using an earlier version of RSLinx Classic or RSLinx Enterprise software as a data server with a controller running firmware revision 18 or later.

Please see [Rockwell Automation Knowledgebase Tech Note #67071](#).

Offline tag and UDT Changes causing RSLinx software to halt communication

RSLinx software maintains knowledge of the memory layout of a Logix5000 controller in order to optimize the data access performance when accessing the data in these controllers. However, changes made to an offline project that are then downloaded can result in RSLinx software attempting to access tag information that is no longer present. When this occurs, RSLinx software halts the communications to the controller.

To recover, both RSLinx software and the software requesting tags from RSLinx software must be restarted. To avoid this anomaly, use caution when making offline changes to a project and then downloading to a Logix5000 controller. In particular:

- Changing the size of an array if elements of the array are already on scan
- Renaming a structure or a member of a user-defined data type used by a tag that is on scan, or
- Changing the data type of a tag on scan from a larger size to a smaller size (for example, changing a DINT to a SINT).

Note that RSLinx Enterprise Series software is able to accommodate these changes without requiring a restart.

Third-party software with Logix Designer application for Studio 5000 Logix Designer version 28.00

The following information is provided to help you better understand the behavior of the Logix Designer application when used with third-party software.

Data access control compatibility with third-party software

Some third-party data servers use un-tested data access methods not published in the Logix5000 Data Access manual. To assure controller integrity and overall system performance and reliably, Version 18 of RSLogix 5000 software only supported documented published methods for writes. Starting in Version 21 of the Logix Designer application, Logix controllers will only support published communications methods for both reads and writes. As a result, some third party data access packages may need to re-write or re-design their drivers to use a published communications method. Please see Rockwell Automation knowledgebase technical note 67071.

Invalid data type error after converting .ACD file

Application Note First Identified Studio 5000 Logix Designer Version 24.00

When using Logix Designer application v24.00 and later to open a prior version .ACD file containing a module referenced by an instruction and also a program-scoped tag of the same name as the module, an "Invalid data type" error occurs during verification.

To work around this error, rename either the module or the tag and ensure all instructions correctly reference the module.

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