FactoryTalk Edge Gateway Standalone and Distributed Quick Start Guide

Standalone Version 1.04.00
Distributed Version 1.00.00

RA Rockwell Automation

Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.

⚠	**WARNING:** Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.

⚠	**ATTENTION:** Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard, and recognize the consequence.

IMPORTANT	Identifies information that is critical for successful application and understanding of the product.

Labels may also be on or inside the equipment to provide specific precautions.

⚡	**SHOCK HAZARD:** Labels may be on or inside the equipment, for example, a drive or motor, to alert people that dangerous voltage may be present.

♨	**BURN HAZARD:** Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.

⚠	**ARC FLASH HAZARD:** Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

Rockwell Automation recognizes that some of the terms that are currently used in our industry and in this publication are not in alignment with the movement toward inclusive language in technology. We are proactively collaborating with industry peers to find alternatives to such terms and making changes to our products and content. Please excuse the use of such terms in our content while we implement these changes.

Summary of Changes

This manual includes new and updated information. Use these reference tables to locate changed information.

Global Changes

None for this release.

New or Enhanced Features

This table contains a list of topics changed in this version, the reason for the change, and a link to the topic that contains the changed information.

Topic Name	Reason
Data Ingress on page 9	Updated FactoryTalk Edge Gateway supported destination systems.
Data Egress on page 10	Updated FactoryTalk Edge Gateway supported applications.
System Requirements on page 11	Updated system requirements.
Install FactoryTalk Edge Gateway / FactoryTalk Live Data Remote Connector on page 12	Added steps to install FTLD remote connector.

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Additional Resources

These documents contain additional information concerning related Rockwell Automation products.

Resource	Description
FactoryTalk Edge Gateway User Manual	Provide guidelines for using FactoryTalk Edge Gateway.
Studio 5000 Smart Object Configurator Quick Start Guide	Provide guidelines for using Studio 5000 Smart Object Configurator.
Studio 5000 Smart Object Configurator Getting Results Guide	Provides technical details on the Studio 5000 Smart Object Configurator.

View or download publications at http://www.rockwellautomation.com/literature. To order paper copies of technical documentation, contact the local Rockwell Automation distributor or sales representative.

Legal Notices

Rockwell Automation publishes legal notices, such as privacy policies, license agreements, trademark disclosures, and other terms and conditions on the Legal Notices page of the Rockwell Automation website.

End User License Agreement (EULA)

You can view the Rockwell Automation End User License Agreement (EULA) by opening the license.rtf file located in your product's install folder on your hard drive.

The default location of this file is:

C:\Program Files (x86)\Common Files\Rockwell\license.rtf.

Open Source Software Licenses

The software included in this product contains copyrighted software that is licensed under one or more open source licenses.

You can view a full list of all open source software used in this product and their corresponding licenses by opening the oss_licenses.txt file located your product's OPENSOURCE folder on your hard drive.

The default location of this file is:

C:\Program Files (x86)\Common Files\Rockwell\Help\FactoryTalk Edge Gateway\ReleaseNotes\OPENSOURCE\oss_licenses.txt.

You may obtain Corresponding Source code for open source packages included in this product from their respective project web site(s). Alternatively, you may obtain complete Corresponding Source code by contacting Rockwell Automation via the **Contact** form on the Rockwell Automation website:

http://www.rockwellautomation.com/global/about-us/contact/contact.page. Please include "Open Source" as part of the request text.

Welcome to FactoryTalk Edge Gateway

FactoryTalk® Edge Gateway™ connects operational technology (OT) to information technology (IT) destination systems. FactoryTalk Edge Gateway collects and organizes data with improved context and makes the data available to stream into higher-level IT applications and databases. FactoryTalk Edge Gateway enables contextualizing OT data at the OT level.

FactoryTalk Edge Gateway supports improved data collection and organization by using these capabilities:

Data Ingress

Data ingress is implemented as data sources in FactoryTalk Edge Gateway. Data sources allow an OT engineer to identify data critical for analysis. Use FactoryTalk Edge Gateway to configure a pathway to collect data from these sources:

- Studio 5000 Logix Designer project file (.acd)
- Studio 5000 Logix Designer controller
- FactoryTalk® Live Data shortcut
- Drive/IMC device
- OPC DA device (In distributed version, OPC DA data can be obtained via the FTLD shortcut using the FTLDR connector)
- KEPServer Enterprise device for third-party-data connectivity (standalone version only)

Data Contextualization

Data contextualization is implemented as models in FactoryTalk Edge Gateway. Models help align data to reflect the specific scenario needing analysis. Having aligned data adds resolution and accuracy to the analysis.

FactoryTalk Edge Gateway offers three options for data contextualization:

- Information models
- FactoryTalk Smart Object instances
- Device Discovery Model

An information model is a framework that allows building relationships at the OT layer as pertaining directly to the OT assets and system attributes. Information models allow for the consideration of the overall operational aspects and their organization in reference to the operational hierarchy. Use the configured data sources to build information models.

FactoryTalk Smart Object instances are created in the Studio 5000 application environment and are imported into FactoryTalk Edge

Gateway via Studio 5000 Logix Designer project files (.acd). A FactoryTalk Smart Object is an extension of the base Logix tag with additional configuration properties. These user-defined configuration properties allow for additional data analysis. FactoryTalk Smart Object instances also provide high-speed data collection with time synchronization and are based on the configuration properties and information model hierarchy. When used with FactoryTalk Smart Object instances, FactoryTalk Edge Gateway offers contextual resolution of high-speed data with time synchronization.

The object-based methodology of FactoryTalk Smart Object instances provides these advantages:

- Common data across the system
- Reuse and library management at the automation layer
- Automatic use by the information layer
- Contemporary foundation for application development

FactoryTalk Smart Object instances are supported in Logix firmware revisions 28.00 or later. FactoryTalk Smart Object instances are automatically discovered from offline Logix project files (.acd) when using an EtherNet/IP driver for data collection. FactoryTalk Smart Object instances organize the data to collect from data sources. After configuring data sources that contain FactoryTalk Smart Object instances, the FactoryTalk Smart Object models become available in **Models**.

FactoryTalk Smart Object instances are not editable from FactoryTalk Edge Gateway. Modify FactoryTalk Smart Object models in the project for the controller.

Device Discovery Model (Auto-Discovery and Model) enables the user to discover all the known devices and bring them into FactoryTalk Edge Gateway for modeling and egress mapping. Models are created automatically based on the devices that are discovered. User is provided with a list of known device types (based on profiles) where they can select one or more known device types. FactoryTalk Edge Gateway discovers all instances of selected devices and inserts all values accessible in the device into the FactoryTalk Edge Gateway namespace whether or not they're in the profile.

Data Egress

Data egress is implemented as applications in FactoryTalk Edge Gateway that have store and forward capabilities. Use applications to configure pathways that deliver contextualized data to the destination system. Data analysis or machine learning data preparation is executed at the destination system using your preferred analytics engine.

FactoryTalk Edge Gateway supports these destination systems:

- Azure IoT Hub (Azure IoT Edge Runtime will be available in a future release of distributed)
- MSSQL
- ThingWorx® (Available in the future release of distributed version)
- MQTT
- InfluxDB

System Requirements

FactoryTalk® Edge Gateway™ works within the system requirements of all Rockwell Automation® software products.

Hardware Requirements

FactoryTalk Edge Gateway requires hardware that meets or exceeds these specifications:

- 8 GB of memory
- Dual-core processor

Rockwell Automation recommends at least 32 GB of available drive space for FactoryTalk Edge Gateway.

FactoryTalk Edge Gateway distributed version is deployed to edge nodes managed via FactoryTalk Edge Manager.   An example of edge node hardware is the ASEM 6300B edge computers.   Hardware must meet requirements. For more information on the supported hardware, including third-party hardware support, please refer to the FactoryTalk Edge Manager documentation.

Software Requirements

FactoryTalk Edge Gateway distributed version is a containerized application delivered and managed via FactoryTalk Edge Manager, which adheres to the FactoryTalk Edge Manager software.

FactoryTalk Edge Gateway standalone version requires the following software on the host computer:

- Operating system

  FactoryTalk Edge Gateway runs on the following Windows® operating systems:

  - Windows 10 Professional or Enterprise edition (64-bit)
  - Windows 11 Professional or Enterprise edition (64-bit)
  - Windows 10 IoT Enterprise 2016
  - Windows Server 2022 Standard
  - Windows Server 2016 Standard
  - Windows Server® 2012 R2 Standard

When you install FactoryTalk Edge Gateway standalone version 1.04.00, the following softwares will be installed if not already present:

- Microsoft .NET Framework version 4.8
- Microsoft ODBC Driver 18.0 for SQL Server x64 version 18.0.1.1
- OPC .NET API version 2.01.10600
- FactroryTalk Diagnostics version 6.31
- Windows Firewall Configuration Utility version 1.00.16
- CodeMeter Runtime Kit version 7.51.5429
- Electronic Data Sheets Reader version 35.0.13
- FactoryTalk Services Platform version 6.31.00
- FactoryTalk Activation Manager version 5.00.12
- EtherNet IP Address Commissioning Tool version 2.01.00
- FactoryTalk Updater Agent version 4.00.00

- Rockwell Automation x64 Driver version 2.03.06

FactoryTalk OPC UA functionality was tested with Kepserver EX.

Supported Browsers

The following web browsers have been tested and are supported for use with this release:

- Google® Chrome™ browser
- Microsoft Edge browser
- Mozilla® Firefox®

Install FactoryTalk Edge Gateway / FactoryTalk Live Data Remote Connector

Use the FactoryTalk Edge Gateway common installer to install FactoryTalk Edge Gateway and FactoryTalk Live Data Remote Connector.

To Install FactoryTalk Edge Gateway

1. To launch the FactoryTalk Edge Gateway common installer, select **Setup.exe**.
2. Select **FT Edge Gateway** from the drop-down list.
3. Select **Customize** to customize the FactoryTalk Edge Gateway by selecting options or keep the default options.
4. Select a location on your computer for the FactoryTalk Edge Gateway application.
5. Select **Install**.
6. Accept the End User License Agreement.
7. Activate FactoryTalk Edge Gateway or skip the activation.
8. Restart your computer. The Factory Talk Gateway Configuration Tool appears in the program list.

To Install FactoryTalk Live Data Remote Connector

Tip: You can install the FT Live Data Remote connector by using the FactoryTalk Edge Gateway common installer or by separate installer only for FT Live Data Remote Connector.

1. To launch the FactoryTalk Edge Gateway common installer/FT Live Data Remote Connector installer, select **Setup.exe**.
2. (Optional) Select **FT Live Data Remote Connector** from the drop-down list.
3. Select **Customize** to customize the FactoryTalk Edge Gateway federation by selecting options or keep the default options.
4. Select a location on your computer for the application.
5. Select **Next**.
6. Provide the following parameters or keep the defaults:

   a. Instance Name

   b. IP Address

   c. Port

7. Select **Install**.
8. Accept the End User License Agreement.
9. Activate FactoryTalk Edge Gateway or skip the activation.

10. Restart your computer.

> 💡 Tip: Provide certificates in .pem format to secure the connection between the remote driver and the client.
>
> For this purpose, use pki directory: provide client private key into key directory (rename as key.pem), client self-signed certificate into cert directory (rename as cert.pem), and server certificate into ca directory (rename as ca.pem). Do the same on server end (remote connector end) providing   server private key into key directory, server self-signed certificate into cert directory, and client certificate into ca directory using the same names.

Perform an Unattended or Silent Install

Unattended or Silent Install

Use command-line parameters to perform an unattended or silent installation of the software.

Installation Command-line Parameters

This table identifies the installation command-line parameters. Command-line parameters are case-insensitive. However, if a specified value includes a space, be sure to enclose the value in quotation marks (for example, "value with spaces").

Parameter	Description
/?	Displays the usage options for installation parameters.
/Q	Silent Install, install runs in a quiet mode without any user interface. This parameter is recommended when deploying the software installation using an IT tool or script, and don't expect any error or restart messages. When using this parameter, check the error codes, and respond as needed. For example, if the installation returns error code 1641, then the IT tool or script should restart the computer and relaunch the installation after restart. This parameter is required if /QS is not specified.
/QS	Unattended Install, install runs in a quiet simple mode and shows progress through the UI, it does not accept any input but still shows error or restart messages. When using this parameter, the installation will stop and display a prompt if there are error or restart messages. For example, if an immediate restart is required to complete the install, a restart message will be displayed to confirm the restart. Installation resumes automatically from the point of interruption after restart. This parameter is required if /Q is not specified.
/IAcceptAllLicenseTerms	Acknowledges acceptance of the license terms. This parameter is required for /Q or /QS parameters.
/AutoRestart	Automatically restarts the computer after the installation is complete. Used when a restart is required to complete the installation. This parameter is optional. If this parameter is not used silent install (/Q) will return either error code 1641 or 3010 if a restart is required, and unattended install (/QS) will result in a confirmation prompt that must be agreed to before the installation is completed.
/Record	Records the installation options chosen to a recording file. This parameter is optional.
/Playback	Plays back a recording file to specify the installation options. This parameter is optional.
/Repair	Runs a repair operation on the installed products. This parameter is optional.
/Uninstall	Uninstalls the product. This parameter is optional.

Parameter	Description
/SetupLanguage="value"	Specifies which language is displayed during install process. The value must be the one of these: • ENU • CHS • DEU • ESP • FRA • ITA • JPN • KOR • PTB This parameter is optional. If this parameter is not used, the default language is the current user or operating system user interface language.
/Product="value"	Specifies which sub-products will be installed. Only required if sub-products are included with the install package. If the software does not include sub-products this parameter is not available.
/ProductLanguage="value"	Specifies the language version of the software being installed. The value must be the one of these: • ENU • CHS • DEU • ESP • FRA • ITA • JPN • KOR • PTB This parameter is optional. If this parameter is not used, the default language is the same as the setup language. If the software does not support multiple languages this parameter is not available.
/InstallLocation="value" Or /InstallDrive="value"	Specifies the install location or install drive respectively. This parameter is optional. If this parameter is not used, the default install location is "C:\Program Files (x86)\Rockwell Software". Some software restricts the installer to only change the drive the software is installed on. Use /? to determine which parameter is supported.
/IgnoreWarning	Specifies that the setup ignores warnings and continues. This parameter is optional. If it is not specified, the setup exits when a warning occurs.
/SerialNumber="value"	Specifies the serial number of the software being installed. This is used to activate the software during installation. This parameter is optional. If it is not specified the software must be activated manually after installation if activation is required. Some software does not require activation. If activation is not required this parameter is not available.
/ProductKey="value"	Specifies the product key used to get activation keys during installation. This parameter is optional. If it is not specified the software must be activated manually after installation if activation is required. Some software does not require activation. If activation is not required this parameter is not available.

Parameter	Description
/Version="value"	Specifies the version of the software to activate which corresponds to the product version associated with the Serial Number and Product Key. This parameter is optional. If it is not specified the installer uses the most recent product version available. Some software does not require activation. If activation is not required this parameter is not available.
/InstanceName (applies to the FTLDR connector installation used with the FactoryTalk Edge Gateway distributed version)	Instance name cannot be empty. It must begin with a lowercase letter and can be 2-40 characters long including alphanumeric, hyphen(s), and underscore(s).
/IP (applies to the FTLDR connector installation used with the FactoryTalk Edge Gateway distributed version)	IPv4 IP Address
/Port (applies to the FTLDR connector installation used with the FactoryTalk Edge Gateway distributed version)	Port numbers must be between 0 to 65535.

Examples

These examples show how to use the installation commands.

- To install the software with no user interface using the default settings during the installation process. (Silent install)

```
Setup.exe /Q /IAcceptAllLicenseTerms
```

- To install the Chinese language version of the software on the D: drive and display the progress, error, or complete messages during installation and restart the computer if necessary. (Unattended install)

```
Setup.exe /QS /IAcceptAllLicenseTerms /AutoRestart
/SetupLanguage=CHS /InstallDrive=D:
```

- To customize components and features for installation, record inputs to a record file and playback on other machines. (Record and Playback)

1. Launch the installation in record mode.

```
Setup.exe /Record
```

The **Setup** page appears.

2. Select **Next**.

The **Customize** page appears.

3. Select the required check boxes and select **Next**.

The **Recording complete** page appears.

4. Select the link for the record file (.rec) to copy the path or the record file the clipboard.

5. Perform silent install by using this command line:

```
Setup.exe /Q /IAcceptAllLicenseTerms
/Playback="<path the record file>"
```

Error codes

This table identifies the error codes that can be returned by an installation.

Error Code	Value	Description
ERROR_SUCCESS	0	The installation completed successfully.
ERROR_INVALID_PARAMETER	87	One of the parameters was invalid.
ERROR_INSTALL_USEREXIT	1602	The installation was cancelled by the user.
ERROR_INSTALL_FAILURE	1603	A fatal error occurred during installation.
ERROR_BAD_CONFIGURATION	1610	The configuration data for this product is corrupt. Contact your support personnel.
ERROR_REBOOT_CONTINUE	1641	A reboot is required to continue to installation.
ERROR_SUCCESS_REBOOT_REQUIRED	3010	A restart is required to complete the installation. After restart the product is successfully installed.
ERROR_REBOOT_PENDING	3012	A restart is pending and is required before the installation can continue.
ERROR_SUCCESS_NOT_APPLICABLE	3013	The installation cannot proceed because the products are already installed.

Configuring the FactoryTalk Edge Gateway

Configuring FactoryTalk Edge Gateway involves connecting to your data sources, contextualizing the data by creating information models, and mapping the contextualize data to applications.

Consult the FactoryTalk Edge Gateway online help for more information.

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Rockwell Automation support

Use these resources to access support information.

Technical Support Center	Find help with how-to videos, FAQs, chat, user forums, and product notification updates.	rok.auto/support
Knowledgebase	Access Knowledgebase articles.	rok.auto/knowledgebase
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	rok.auto/pcdc

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Your comments help us serve your documentation needs better. If you have any suggestions on how to improve our content, complete the form at rok.auto/docfeedback.

Waste Electrical and Electronic Equipment (WEEE)

At the end of life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental information on its website at rok.auto/pec.

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