



Installation Instructions

FactoryTalk Historian Machine Edition Module

Catalog Number 1756-HIST1G and 1756-HIST2G

Use this document as a guide to install the FactoryTalk Historian Machine Edition Module. Note that this document describes hardware installation only. For configuration information, refer to the FactoryTalk Historian ME User's Guide, publication number 1756-UM611A-EN-E, available on the FactoryTalk Historian ME Installation CD.

The following table lists the contents of this document and where to find specific information.

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Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. *Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls* (Publication SGI-1.1 available from your local Rockwell Automation sales office or online at <http://www.ab.com/manuals/gi>) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

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.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

Reproduction of the contents of this manual, in whole or in part, without written permission of Rockwell Automation, Inc. is prohibited.

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

<p>WARNING</p> 	<p>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.</p>
<p>IMPORTANT</p>	<p>Identifies information that is critical for successful application and understanding of the product.</p>
<p>Attention</p> 	<p>Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you:</p> <ul style="list-style-type: none"> • identify a hazard. • avoid a hazard. • recognize the consequence.
<p>Shock Hazard</p> 	<p>Labels may be located on or inside the equipment (e.g., drive or motor) to alert people that dangerous voltage may be present.</p>

Important User Information

Burn Hazard



Labels may be located on or inside the equipment (e.g., drive or motor) to alert people that surfaces may have dangerous temperatures.

Environment and Enclosure Information

Attention



This equipment is intended for use in a Pollution Degree 2 industrial environment in overvoltage Category II applications (as defined in IEC publication 60664-1) at altitudes up to 2000 meters without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR 11. Without appropriate precautions, there may be difficulties with electromagnetic compatibility in residential and other environments due to conducted and radiated disturbances.

This equipment is supplied as open-type equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The enclosure must have suitable flame-retardant properties to prevent or minimize the spread of flame, complying with a flame spread rating of 5VA, V2, V1, V0 (or equivalent) if non-metallic. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

NOTE: See NEMA Standards publication 250 and IEC publication 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure. Also, see the appropriate sections in this publication, as well as the Allen-Bradley publication 1770-4.1 (“Industrial Automation Wiring and Grounding Guidelines”), for additional installation requirements pertaining to this equipment.

Prevent Electrostatic Discharge Information

Attention

This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:

- Touch a grounded object to discharge potential static.
 - Wear an approved grounding wriststrap.
 - Do not touch connectors or pins on component boards.
 - Do not touch circuit components inside the equipment.
 - Use a static-safe workstation, if available.
 - Store the equipment in appropriate static-safe packaging when not in use.
-

Removal and Insertion Under Power (RIUP) Capability

WARNING



When you insert or remove the module while backplane power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding. Repeated electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance that can affect module operation.

Ethernet Network Communications Connections

WARNING



If you connect or disconnect the communications cable with power applied to this module or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

North American Hazardous Location Approval

The following information applies when operating this equipment in hazardous locations:

Products marked “CL I, DIV 2, GP A, B, C, D” are suitable for use in Class I, Division 2 Groups A, B, C, D, hazardous locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest “T” number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local authority having jurisdiction at the time of installation.

Informations sur l’utilisation de cet équipement en environnements dangereux:

Les produits marqués “CL I, DIV 2, GP A, B, C, D” ne conviennent qu’à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d’identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d’équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l’installation.

The following information applies when operating this equipment in hazardous locations:		Informations sur l'utilisation de cet équipement en environnements dangereux:	
WARNING 	EXPLOSION HAZARD <ul style="list-style-type: none"> • Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous. • Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product. • Substitution of components may impair suitability for Class I, Division 2. • If this product contains batteries, they must only be changed in an area known to be nonhazardous. 	AVERTISSEMENT 	RISQUE D'EXPLOSION <ul style="list-style-type: none"> • Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement. • Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit. • La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2. • S'assurer que l'environnement est classé non dangereux avant de changer les piles.

Identify FactoryTalk Historian ME Module Components

Use the following figures to identify the external features of the FactoryTalk Historian ME Module.

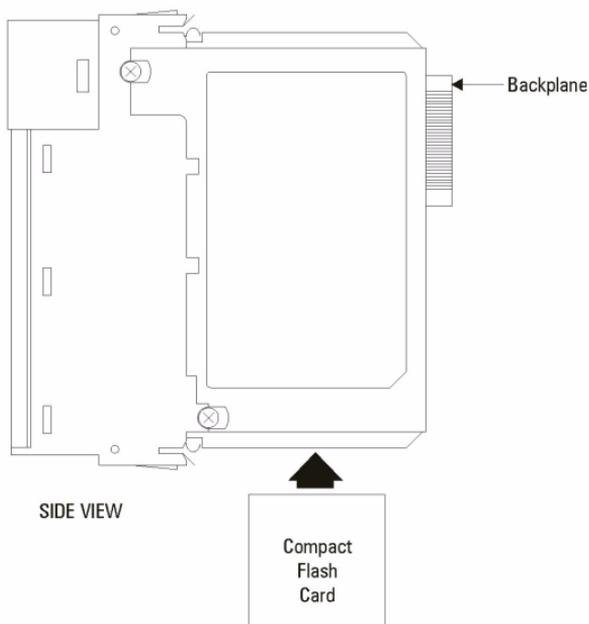
FactoryTalk Historian ME Module Front View

In the following figure, the FactoryTalk Historian ME Module is shown from the front view with the four-character LED display, LED indicators (BAT, STS, OK), and Ethernet port locations identified.



FactoryTalk Historian ME Module Side View

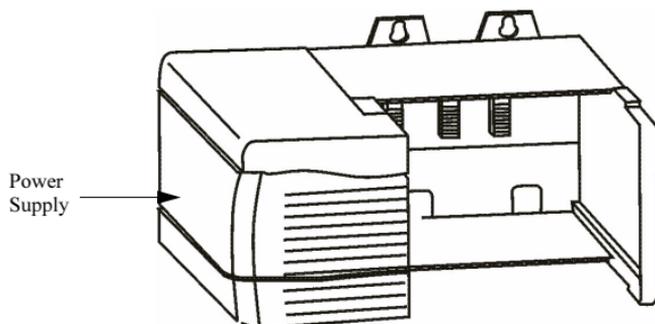
In the following figure, the FactoryTalk Historian ME Module is shown from the side view with the backplane and compact flash card slot location identified.

**IMPORTANT**

All data on the compact flash card is locked to Historian ME modules. It cannot be read by any other device.

Prepare the Chassis for Module Installation

Before you install the module, you must install and connect a ControlLogix chassis and power supply.

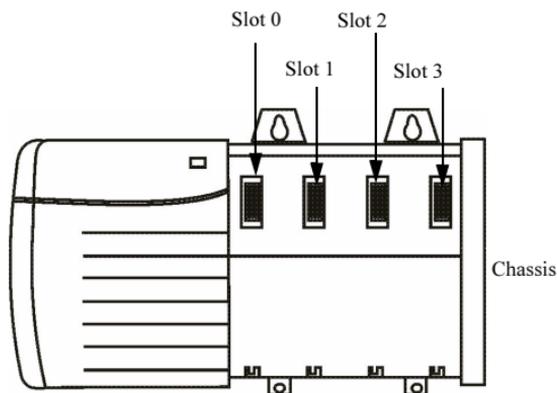


For information on installing these products, refer to the publications listed below.

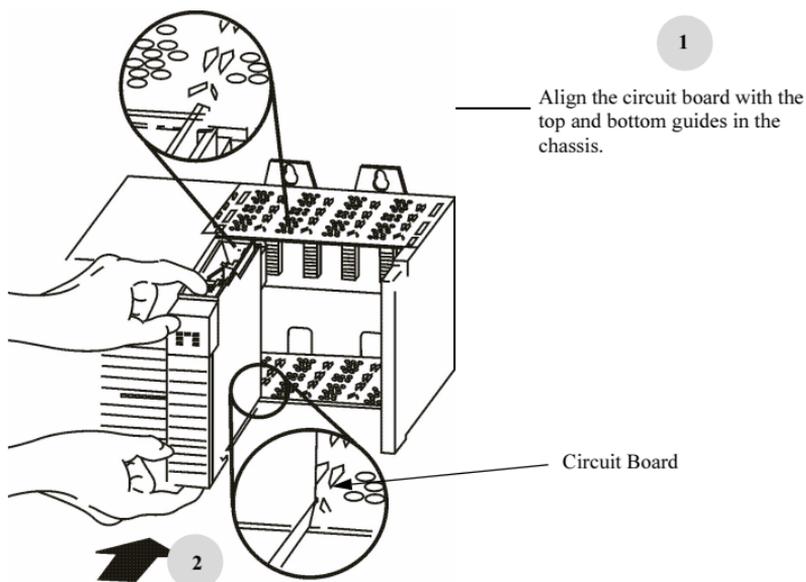
Chassis Type	Chassis Installation	Power Supply	Power Supply Installation
Series B: 1756-A4, -A7, -A10, -A13, -A17	Pub. No. 1756-IN080	1756-PA72/B	Pub. No. 1756-5.67
		1756-PB72/B	
		1756-PA75/A	Pub. No. 1756-5.78
		1756-PB75/A	

Determine Module Slot Location

You can install the module in any slot in the ControlLogix chassis. You can have a maximum of two 1756-HIST modules in the same chassis. The figure below shows chassis slot numbering in a 4-slot chassis. Slot 0 is the first slot and is always the leftmost slot in the rack (the first slot to the right of the power supply).



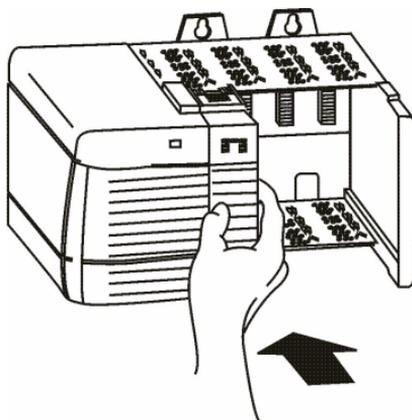
Install the Module in the Chassis



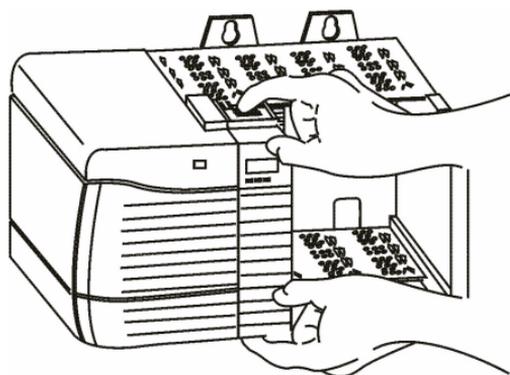
Slide the module into the chassis. Make sure the module backplane connector properly connects to the chassis backplane.

3

The module is properly installed when it is flush with the power supply or other installed modules.

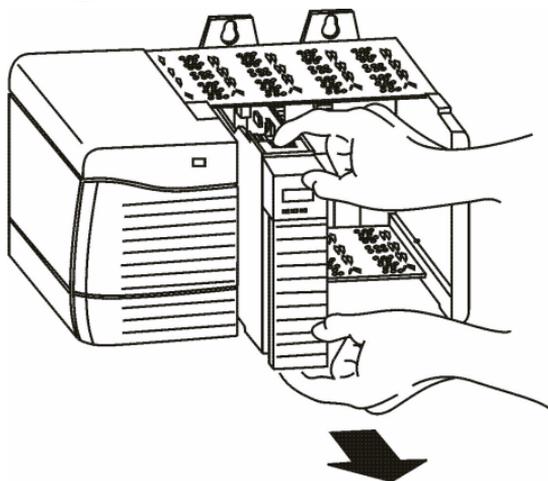


Remove or Replace the Module (when applicable)



1

Push on the upper and lower module tabs to disengage them.



2

Slide the module out of the chassis.

IMPORTANT

If you are replacing an existing module with an identical one, and you want to resume identical system operation, you must install the new module in the same slot.

Install or Remove the Module Under Power

This module is designed to be installed or removed while chassis power is applied. Rockwell Automation recommends that you stop all data collection services before you remove the module.

WARNING

When you insert or remove a module while backplane power is on, an electrical arc may occur. An electrical arc can cause personal injury or property damage by:

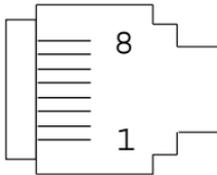
- sending an erroneous signal to your system's field device causing unintended machine motion or loss of process control.
- causing an explosion in a hazardous environment.

Repeated electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance that can affect module operation.

Wire the Ethernet Connector

Use an RJ45 connector to connect to the Ethernet. Wire the connector according to the following illustration:

8 ----- NC
7 ----- NC
6 ----- RD-
5 ----- NC
4 ----- NC
3 ----- RD+
2 ----- TD-
1 ----- TD+



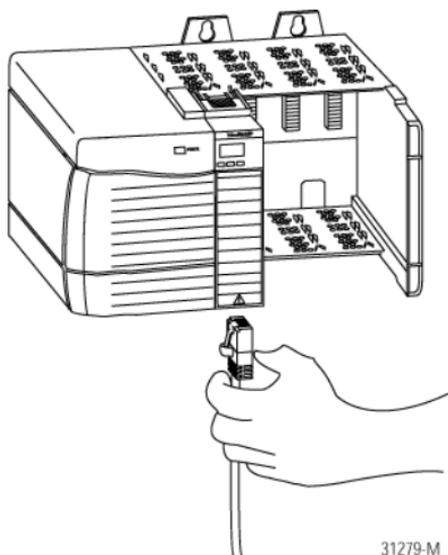
RJ 45

Connect the Module to the Ethernet Network

WARNING

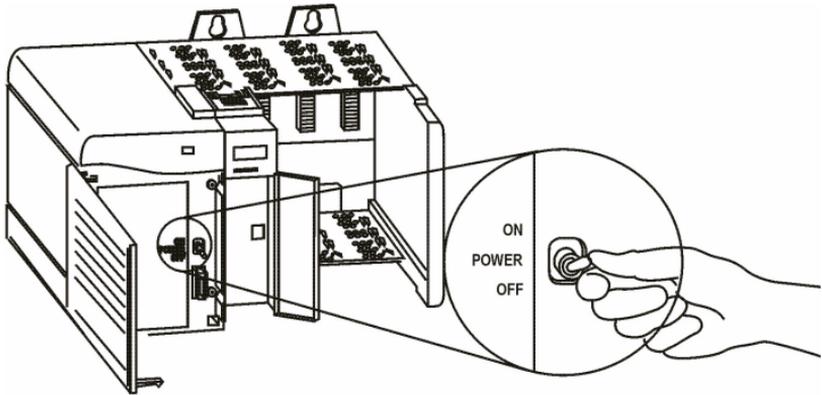
If you connect or disconnect the Ethernet cable with power applied to this module or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

Attach the RJ45 connector the Ethernet port on the front of the module as shown.

**IMPORTANT**

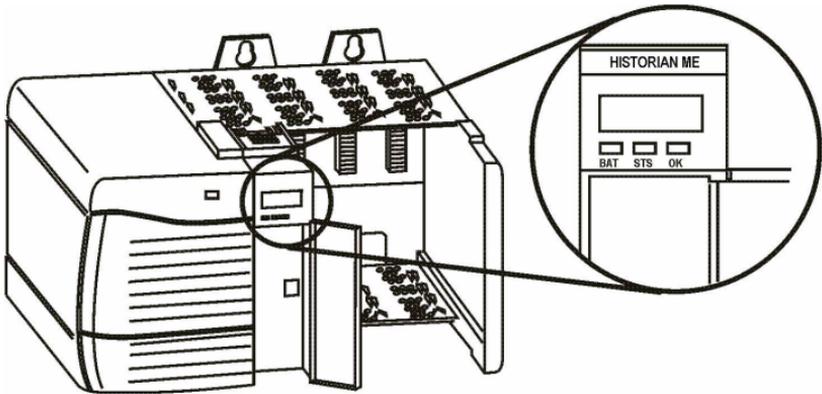
We recommend connecting the module to the network via a 100 MB Ethernet switch, which will reduce collisions and lost packets and increase network bandwidth. For detailed EtherNet connection information, see the ControlLogic Ethernet/IP Bridge Module Installation Instructions, publication number 1756-EN2T IN603B-EN-P.

Apply Chassis Power



Check Power Supply and Module Status

Check the LED indicators and four-character LED display to determine if the power supply and module are operating properly. Note that it can take up to four to five minutes for the module to become fully operational once power is applied.



LED Indicator Information

There are two LED indicators on the front panel of the FactoryTalk Historian ME Module: the three status LED lights and the four-character LED display. These LED indicators determine if the power supply and module are operating properly. They are described in the following sections.

Status LED Lights

The Status LED lights provide the following information:

LED light	On power-up	Status	Description
BAT	Actual indication of battery condition.	Battery status.	Single red LED. Red indicates the battery charge is low. Off indicates the battery is operating normally.
STS	Off	Application status. Refer to the Application Status section of this guide for status descriptions.	Single bi-color red/green LED. Flashing red indicates that data collection is active but data transfer is inactive. Solid red indicates that data collection is inactive. Check the interface or scrolling text display for more information. Flashing green indicates that data collection is active but data transfer is not configured. Solid green indicates that both data collection and data transfer are active.

LED light	On power-up	Status	Description
OK	Green	Module status.	Single bi-color red/green LED. Red indicates a major fault has occurred in the module. Green indicates the module is operating normally.

Four-character LED Display

The four-character LED display provides system status in a static and/or scrolling string on the front panel of the FactoryTalk Historian ME Module. Once an application is started, it has the responsibility of controlling this display.

The four-character LED display provides the following information:

Process or component	Four-character display	Description
Start-up or re-set	INIT	Displays “INIT” for 3-5 seconds when initializing start-up or re-set.
Start-up or re-set	OK	Displays “OK” for 3-5 seconds if the initialization of all major software components was successful.
Shutting down	SHUTTING DOWN	Displays “SHUTTING DOWN” during the shutdown process.
Shut down	SHUT DOWN	Displays “SHUT DOWN” when shut down is finished.

Process or component	Four-character display	Description
Ethernet port	LAN OK	Displays “LAN OK” if the Ethernet port is configured and the IP address is acquired properly, followed by the IP address.
Ethernet port	LAN LOST	Displays “LAN LOST” for several seconds if the Ethernet port fails to acquire the IP address. After “LAN LOST” appears, the MAC address will be displayed.
Application subsystems	Configuration status: not configured, no points. Data Collection status: collect ok, idle, collect stopped. Data Transfer status: upload ok, upload stopped, no upload. Data Storage status: storage critical, storage full.	Refer to the Application Status section of this guide for detailed information about the application subsystems.

Application Status

The Application Status is composed of four application subsystems, as described in the following table.

Note: If more than one of the four statuses exist, then they are displayed one after another with a two second duration between each message.

Application Subsystem	Status	Description
Configuration status	<ul style="list-style-type: none"> A. Not configured B. No points 	<p>If neither Data Transfer or Data Collection is configured, then the “Not configured” status is displayed. Otherwise, the status is empty. Note: <i>Data Collection</i> is not configured if the number of subscribed points from the data server is zero (0). If <i>Data Collection</i> is not configured, but <i>Data Transfer</i> is configured, then the configuration status is “No points.” Otherwise, the status is empty. Note: <i>Data Transfer</i> is not configured if the SE Host Server Name or IP address is not entered or is not resolved. The status is “No upload.”</p>

Application Subsystem	Status	Description
Data collection status	<ul style="list-style-type: none"> A. collect ok B. collect stopped 	<p>If Data Collection is active and properly configured, then the “collect ok.” If Data Collection is configured but <i>not</i> active, then the “collect stopped” status is displayed.</p>
Data transfer status	<ul style="list-style-type: none"> A. upload ok B. upload stopped 	<p>If Data Transfer is active and configured, then the Data Transfer status is “upload ok.” If Data Transfer is configured but not active, and the Data Collection status is not “idle,” then the Data Transfer status is “upload stopped.” Otherwise, the Data Transfer status is empty.</p>
Data storage status	<ul style="list-style-type: none"> A. storage critical B. storage full 	<p>If Data Storage reaches 50% capacity (default value for the first threshold), then the Data Storage status is “storage critical.” If Data Storage reaches 75% capacity (default value for the second threshold), then the Data Storage status is “storage full.” Otherwise, the status is empty.</p>

Port (Ethernet) LED Information

The Port (Ethernet) LED on the 10/100 BASET connector supports IEEE 802.3, has a green LED for link activity, and an amber LED for 10/100 link speed indication.

Where to Find Information on Configuring the Module

To configure your module, refer to the FactoryTalk Historian ME User's Guide, publication number 1756-UM611A, available on the FactoryTalk Historian ME Installation CD and online at www.rockwellautomation.com/literature.

How to Upgrade and Reinstall the Firmware

To upgrade the FactoryTalk Historian ME firmware (or reinstall it in case it becomes corrupted), you must use the ControlFLASH Firmware upgrade kit. Before you upgrade, please back up your log files by going to the Web Diagnostics interface > Firmware > Upload Logs. Please see the FactoryTalk Historian ME User's Guide for more information. For instructions on how to perform the upgrade, please refer to the ControlFLASH Firmware Upgrade Kit Quick Start Guide, publication number 1756-QS105C-EN-E. Before you perform the upgrade, collect the following information, as you will need it during the upgrade:

- The catalog number of the FactoryTalk Historian ME Module. This is either 1756-HIST1G or 1756-HIST2G, depending on the size of the compact flash drive.
- The network configuration information.
- The network path to the FactoryTalk Historian ME Module.

- The firmware version number, which is listed on the FactoryTalk Historian ME Module's home page.

IMPORTANT

Any kind of firmware upgrade or reinstall will clear out all logs. A firmware upgrade will preserve archived data and application configuration information, but a reinstall will clear out all application configuration information and archived data. If you want to save your settings, therefore, download and back up your configuration and logs. For more information, refer to the FactoryTalk Historian ME user's guide chapter on module administration.

Specifications

Cat. No.	1756-HIST1G 1756-HIST2G
Environmental Conditions	
Operating Temperature	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): 0...60 °C (32...140 °F)
Non-operating Temperature	IEC 60068-2-1 (Test Ab, Unpackaged Non-operating Cold), IEC 60068-2-2 (Test Bb, Unpackaged Non-operating Dry Heat), IEC 60068-2-14 (Test Na, Unpackaged Non-operating Thermal Shock): -40...85 °C (-40...185 °F)
Relative Humidity	IEC 60068-2-30 (Test Db, Unpackaged Damp Heat): 5...95% noncondensing
Vibration	IEC 60068-2-6 (Test Fc, Operating): 2g @ 10...500 Hz
Operating Shock	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 30g
Non-operating Shock	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 50g
Emissions	CISPR 11: Group 1, Class A
ESD Immunity	IEC 61000-4-2: 4kV contact discharges 8kV air discharges
Radiated RF Immunity	IEC 61000-4-3: 10V/m with 1 kHz sine-wave 80% AM from 80...2000MHz 1V/m with 1 kHz sine-wave 80% AM from 2000...2700MHz
EFT/B Immunity	IEC 61000-4-4: ±1 kV at 5 kHz on communications ports
Surge Transient Immunity	IEC 61000-4-5: ±1 kV line-earth(CM) on communications ports
Conducted RF Immunity	IEC 61000-4-6: 10V/rms with 1 kHz sine-wave 80% AM from 150 kHz...80MHz

Cat. No.	1756-HIST1G 1756-HIST2G
All supply voltages and/or current ratings.	5.1 V DC @ 800 mA 24 V DC @ 3 mA
Isolation Voltage	30V (continuous), Basic Insulation Type. Type tested at 500V AC for 60 s, Ethernet to System
Wire Size	Ethernet connections: RJ45 connector according to IEC 60603-7, 2 or 4 pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702
Wiring Category ¹	2 - on communications ports
North American Temp Code	T4
Certifications ² (when product is marked)	c-UL-us: UL Listed Industrial Control Equipment, certified for US and Canada c-UL-us: UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada CE: European Union 2004/108/EC EMC Directive, compliant with: EN 61326-1; Meas./Control/Lab, Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B) C-Tick: Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions

¹ Use this Conductor Category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines".

² See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

Allen-Bradley and ControlLogix are trademarks of Rockwell Automation.

Ethernet is a trademark of Digital Equipment Corporation, Intel, and Xerox Corporation.

Rockwell Automation Support

Rockwell Automation provides technical information on the web to assist you in using its products. At <http://support.rockwellautomation.com>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

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

Installation Assistance

If you experience a problem with a hardware module, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your module up and running:

United States	1.440.646.3223 Monday – Friday, 8am – 5pm EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

New Product Satisfaction Return

Rockwell tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned:

United States	Contact your distributor. You must provide a Customer Support case number (see phone number above to obtain one) to your distributor in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for return procedure.

www.rockwellautomation.com

Corporate Headquarters

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