Release Notes

Allen-Bradley

POINT I/O and ArmorPOINT I/O Dual Port EtherNet/IP Adapters

Firmware Revision: 3.012
Catalog Numbers 1734-AENTR, 1738-AENTR, Series A

About This Publication

These release notes for Firmware Revision 3.012 supplement the existing documentation supplied with your product. Read this document before using a POINT I/O™ or ArmorPOINT® I/O EtherNet/IP adapters.

Before You Begin

Firmware Backward Compatibility

The 1734-AENTR and 1738-AENTR Add-on Profiles are compatible with RSLogix™ 5000 software version 17, or greater.

If you use the 1734-AENTR or 1738-AENTR adapter with a 1756-ENBT or 1768-ENBT module, use the following firmware revisions for these bridge modules:

- 1756-ENBT firmware revision 4.006 or greater
- 1768-ENBT firmware revision 2.003 or greater

The 1734-AENTR adapters will accept I/O connections with compatible electronic keying for the 1734-AENT. This allows the 1734-AENTR adapter to be used with the 1734-AENT Add-on Profile.

The 1738-AENTR adapters will accept I/O connections with compatible electronic keying for the 1738-AENT. This allows the 1738-AENTR adapter to be used with the 1738-AENT Add-on Profile.

Add-on Profiles can be downloaded from:
https://www.rockwellautomation.com/rockwellautomation/support/downloads.page

ATTENTION: The 1734-AENTR and 1738-AENTR, Series A, POINT I/O and ArmorPOINT I/O dual port EtherNet/IP adapters with 3.011 or 3.012 firmware **should not** be ControlFlash updated with any earlier firmware revision.
If firmware revision 3.011 or 3.012 is currently installed, downgrading the product to an earlier firmware revision will render the product inoperable. Note that downgrading from 3.012 to 3.011 will be possible and successful, but downgrading from 3.012/3.011 to 3.010 or an earlier revision will be an issue.

Enhancements

Enhancements for Firmware Revision 3.010

Enhancement	Description
IP default gateway setting	When the address switches are set to a value of 001…254, the switches are used as the last octet of the module's IP address. The private network address 192.168.1.xxx (as allowed by RFC1918) is used for the first three octets of the IP address. For example, if the address switches are set to 010, the module IP address is 192.168.1.10. When 192.168.1.xxx addresses are used, set the network mask and gateway address as follows: Network mask: 255.255.255.0 Gateway address: 192.168.1.1 When the address switches are set to 001, the module gateway address is set to 0.0.0.0. The module IP address cannot be the same as its gateway.

Enhancements for Firmware Revision 3.001

Enhancement	Description
Support for bridging	Additional support for bridging Safety connections to POINT Guard I/O™ modules.
Improved module responsiveness	Module responsiveness improved by: • Improving backplane and Ethernet message processing. • Restructuring some backplane instructions to reduce system latency. • Streamlining Ethernet operations to avoid receive overrun conditions and speed up processing.
Support for Assembly Object connection	Support added for an Assembly Object connection. This connection allows you to exchange data for an entire POINT I/O and ArmorPOINT I/O chassis in one connection.
Support for unicast I/O connections	Full support added for unicast I/O connections.

Anomalies

Known Anomalies for Firmware Revision 3.012

Anomaly	Description
Firmware downgrade will render module unusable	When the MAC ID starts with E4:xx:xx:xx:xx:xx and the firmware is downgraded from firmware revision 3.012 to a firmware revision earlier than 3.011, the adapter module will become unusable.
I/O connection to one of the POINT I/O modules may not be established after dynamic power cycle	I/O connection to one of the POINT I/O modules on the backplane may be lost after dynamic power cycles to one or more switches and devices in the network. The I/O connection is restored after power is cycled to the I/O module. This anomaly is rarely observed.
Adapter is in the wrong state after dynamic power cycle	The adapter goes into the wrong state after dynamic power cycles to one or more switches and devices in the network. The correct state is restored after power is cycled to the adapter. This anomaly is rarely observed.
Status LED remains solid green when connection times out	1734-AENTR and 1738-AENTR Network Status LED remains solid green when POINT Guard I/O connection times out, but only when the backplane connections only include Safety modules.
Long Host Names are ignored	Host Names longer than 16 characters are not used. The module accepts names as long as 64 characters but ignores the Host Name if it is longer than 16 characters.
Firmware downgrade will render module unusable	When the MAC ID starts with E4:xx:xx:xx:xx:xx and the firmware is downgraded from firmware revision 3.011 to an earlier firmware revision, the adapter module will become unusable.

Corrected Anomalies for Firmware Revision 3.012

Anomaly	Description
Safety I/O module connections remain in 203 error state during rapid intermittent network disconnections and reconnections	Rapid, intermittent disconnection and reconnection of the adapter's network connection, after an initial successful network connection, while connected to a safety I/O module, triggers a continuous, static "203 error" in the safety I/O module. The anomaly occurs with all firmware versions used in the adapter.

Corrected Anomalies for Firmware Revision 3.011

Anomaly	Description
Ethernet connection timeout after the Ethernet cable for daisy chain port reinserted	When an Ethernet/IP device is connected to 1734-AENTR/1738-AENTR by daisy-chaining, unplugging and reinserting the Ethernet cable between these two modules causes the I/O connection between the controller and the Ethernet/IP device timeout.
Outputs transition to Program Mode output value after recovering from a communication fault	When a 1734-AENTR or 1738-AENTR is connected to any output module with the controller in run mode successfully controlling the outputs, if communications with the controller is lost the outputs will properly transition to their Fault Mode state. When communications between the output modules and the controller is re-established, the output modules may first transition to their Program Mode state before going to their Run Mode state.

Corrected Anomalies for Firmware Revision 3.010

Anomaly	Description
Output data of POINT I/O adapter out of sequence	When output data is updated every 2 ms, on a constant basis, one occurrence of out of sequence in output data is observed in the space of a few hours.
Changes in slot status header are not reflected in sequence count	The assembly connection for POINT I/O and ArmorPOINT adapters includes a 64-bit slot status header. This header is used to indicate which modules are alive and participating in the connection. When any data changes, for either I/O data or the slot status header, the transport sequence count needs to be changed. The sequence count is correctly updated when modules join the connection, but it is not updated when they leave the connection.

Corrected Anomalies for Firmware Revision 3.009

Anomaly	Description
ArmorPOINT adapter fails to reconnect to ArmorStart after losing ENET	ArmorStart® connects to the controller through the ArmorPOINT adapter over an Ethernet network. When the Ethernet link to the adapter is lost and then recovered, sometimes the adapter fails to reconnect to the ArmorStart. The ArmorPOINT adapter POINTBus Status LED blinks red. This issue stays until power is cycled to the ArmorPOINT adapter.

Corrected Anomalies for Firmware Revision 3.008

Anomaly	Description
False state shown in software for disabled port	After an Ethernet port of 1734-AENTR and 1738-AENTR is disabled by using RSLinx® Classic, the “Enabled” check box remains selected for the disabled port when the “Advanced port configuration” tab of “Module Configuration” menu in RSLinx Classic.
Electronic Key Segment validation error	Electronic Key Segments with segment errors detected in an Ethernet/IP message causes the adapter to stop communicating.
1734-AENTR and 1738-AENTR adapter network becomes non-responsive	A vulnerability in the 1734-AENTR and 1738-AENTR adapter network causes the web server or Ethernet/IP service to become non-responsive.
Adapter does not respond after power cycle	One or more 1734-AENTR and 1738-AENTR adapters are non-responsive on a system with multiple Ethernet switches that have DHCP per port enabled after power is cycled to the entire system. No network activity is detected from the modules. Cycling power to the affected units resolves the issue and establishes the connection. This occurs on random 1734-AENTR and 1738-AENTR adapters at system power up.
Adapter stops communicating	Resetting a POINT I/O or ArmorPOINT I/O module, using the module profile dialog or a Reset MSG instruction, breaks all future non-I/O communication to that I/O module until the adapter is power cycled.

Corrected Anomalies for Firmware Revision 3.006

Anomaly	Description
Adapter stops communicating	Re-configuring a POINT I/O or ArmorPOINT I/O module, while an I/O connection to that module is established, breaks all future non-I/O communication to that I/O module until the adapter is reset.

Corrected Anomalies for Firmware Revision 3.005

Anomaly	Description
Adapter stops communicating	Anomalous behavior was observed from the adapter Ethernet controller, causing the adapter to stop communicating. This release corrects this anomalous behavior by using a different mode recommended by the component supplier.

Corrected Anomalies for Firmware Revision 3.004

Anomaly	Description
False Module In Use condition	When a 1734-AENTR was connected to the network through a 1734-AENTR in a daisy chain configuration, the 1734-AENTR reported a Module In Use condition at power up. The relative timing between a single port and dual port module during initialization caused the single port module to lose and then regain its link. This event was not handled properly during port initialization.
Adapter not allowing connections after power loss	Following a power cycle, a rapid link established/link lost event was not properly handled by the adapter and left it in a state where it was online but unable to make connections.
Compatible keying error	Dual port adapters are supposed to accept Forward_Open requests directed to single port modules when compatible keying is selected. An error in the code allowed the single-port adapters to accept any key as a valid key. The single port adapter behavior is corrected to only accept its own key. Dual port adapters will accept their own key or a compatible single port key.
Changes to port configuration did not take effect	When changes were made to Port Configuration using RSLinx, the module still responded to broadcast messages using the old settings.

Corrected Anomalies for Firmware Revision 3.004

Anomaly	Description
Unknown interface status	The Network Settings web page for single port adapters was corrected to display interface status. In previous versions the state is always “unknown”.
Incorrect module revision shown	Module Information web pages, accessed through a chassis browse, incorrectly displayed the module revision.
Duplicate IP addresses	A DHCP-enabled module which is assigned a duplicate IP address did not properly decline the address.
Invalid-sized T—>O data	Corrected an anomaly whereby a Rack Optimized listener could request different sized T—>O data and the connection would be accepted without altering the multicast T—>O data that was already being produced. The listener's connection would eventually timeout after 10 seconds of receiving what it considered to be invalid-sized data.
Multicast connection requests from off-subnet originators accepted	Multicast connection requests coming from off-subnet originators were being accepted. These should be rejected because the module implementation limits multicast productions to the subnet (TTL = 1). This anomaly applies to owning and listen only connections from off-subnet originators. The code was corrected to reject these requests.
Incorrect connection counts	Corrected the logic that counted connections in use. When unicast support was added some invalid logic was introduced that caused Listen-Only Rack Optimized connections to count against the total. If the Listen-Only request completed prior to the adapter using all 20 of its connections, the request would be allowed. If the request came in after all 20 were used, it was denied.
IP Address Switch setting of 1 does not work	In version 3.003.4, using an IP Address Switch setting of 1 caused the Link to be configured improperly. All other switch settings work as expected.
IP Address switches non functional	IP Address switches cannot be used to address modules that shipped from the factory with revision 3.003.4. Older modules that have had firmware updated to 3.003.4 are not affected. Updating the firmware to revision 3.004 will correct the problem.

Corrected Anomalies for Firmware Revision 3.001

Anomaly	Description
Invalid time reporting	Module Uptime shown on the Diagnostic web page reports invalid time.
Anomalous behavior of Rack Optimized connections	Extended testing of Rack Optimized connections showed 2xRPI of jitter. The revised firmware now implements a “just in time” refresh of data that eliminates 1 RPI of jitter.
Comm Format of ‘none’ not functional	A Comm Format of ‘none’ is not functional in revision 2.004 of the 1738-AENTR build.
Invalid LED behavior	Invalid LED behavior observed for the Network Status LED when the link is lost, and for the Module Status LED during a ControlFlash update.
Modified behavior with switch settings at 888	Setting the adapter address switches to 888 restores all configuration to factory defaults. Following the use of 888 the module must be power cycled with the switches set to something other than 888. Added Ethernet driver “disabling” when the switches are set to 888. The clearing of a module's host name and restoring Module Description, Module Location back to factory defaults has also been added.
Instance or Attribute values greater than 255 not handled properly	Instance or Attribute values greater than 255 are not handled properly when using the web page to perform Class, Instance, and Attribute servicing.
Connections with invalid sizes accepted	The produced/consumed size check was not performed early enough in the connection opening process, allowing connections with invalid sizes to be accepted.
Connection counts incorrectly adjusted	Under certain error conditions, connection counts were incorrectly incremented and decremented.
Adapter loses Listen Only connections	An anomalous error checking code caused all consumed heartbeats across Listen Only connections to log internal error conditions. The adapter loses connections if enough Listen Only connections were made to the adapter.
Ethernet frames rejected	Ethernet frames with non-zero “Type of Service” values were rejected. The code was corrected to accept these frames.

Corrected Anomalies for Firmware Revision 2.004

Anomaly	Description
Misapplied multicast address assignment algorithm	Each module is allowed to use a block of 32 multicast addresses, based on its IP address and subnet mask. The algorithm was misapplied resulting in multicast addresses that were off by one.

Corrected Anomalies for Firmware Revision 2.003

Anomaly	Description
Modules in a Rack Optimized connection may appear "in use"	Modules participating in a Rack Optimized connection may appear "in use" if the connection originator never receives the connection open response. The 1734-AENTR has been modified to monitor the slot status bits on connection startup and tear down the connection if a mismatch exists following a period of 10 seconds. Modules may appear "in use" if connection opens and closes are processed simultaneously. During the startup of a Rack Optimized I/O connection, if the originator allows the parent rack connection to timeout before the target ever completes the child open requests, backplane connections were not being properly released. Subsequently, those modules remained stuck "in use". The corrected code properly cleans up the backplane connections in this scenario.
Lack of behavior to support Reduced Heartbeat	Version 16 of RSLogix 5000 implements the Reduced Heartbeat feature. As a result of this feature the originator will try to establish Listen Only connections with reduced RPIs on the heartbeat side of the connection. The 1734-AENTR was implemented to reject connection requests if RPIs are different from an existing connection. This code was modified to only test the T—>O side of the connection and allow differences on the O—>T side.

Additional Resources

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

Notes:

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At http://www.rockwellautomation.com/support/, 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://www.rockwellautomation.com/support/.

Installation Assistance

If you experience a problem within the first 24 hours of installation, 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 product up and running.

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

New Product Satisfaction Return

Rockwell Automation 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, follow these procedures.

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

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication RA-DU002, available at http://www.rockwellautomation.com/literature/.

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