

FLEX I/O Dual-port EtherNet/IP Adapters

Catalog Numbers 1794-AENTR, 1794-AENTRXT

Allen-Bradley
by ROCKWELL AUTOMATION

User Manual

Original Instructions

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.

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

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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.

These 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).

The following icon may appear in the text of this document.



Identifies information that is useful and can help to make a process easier to do or easier to understand.

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.

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About This Publication

This manual describes how you can use your FLEX™ I/O EtherNet/IP™ adapter with your controller. The manual helps you install, program, and troubleshoot your module.

Download Firmware, AOP, EDS, and Other Files

Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes from the Product Compatibility and Download Center at rok.auto/pcdc.

Studio 5000 Logix Designer Application

The Studio 5000 Logix Designer® application is the re-branding of RSLogix 5000® software and continues to be the product to program Logix 5000® controllers for discrete, process, batch, motion, safety, and drive based solutions.

Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

Topic	Page
Updated Additional Resources	7
Updated topic Configuration Requirements	19
Updated section Implicit Protection Mode	22
Updated section Enable or Disable Web Server and SNMP Agent	24
Updated section Enable or Disable the Web Server	49
Updated section Mandatory First-time Password Change	51
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Added section Session Timeout - Inactivity Timeout	51
Updated topic Access Configuration Pages	54 and 56

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation. You can view or download publications at rok.auto/literature.

Additional Resources

Resource	Description
FLEX I/O and FLEX I/O-XT Selection Guide, publication 1794-SG002	A description and overview of the FLEX I/O and FLEX I/O-XT™ modules and compatible control platforms.
FLEX I/O Dual-port EtherNet/IP Adapters Installation Instructions, publication 1794-IN131	Provides information on how to install the FLEX I/O redundant EtherNet/IP adapters.
FLEX I/O Power Supply Modules Installation Instructions, publication 1794-IN069	Provides information on how to install the FLEX I/O DC power supply modules.
Interconnect Cable Installation Instructions, publication 1794-IN012	Provides information on how to install the extension cables.
EtherNet/IP Device Level Ring Application Technique, publication ENET-AT007	Describes Device Level Ring (DLR) network operation, topologies, configuration considerations, and diagnostic methods.
EtherNet/IP Network Devices User Manual, publication ENET-UM006	Describes how to configure and use EtherNet/IP devices to communicate on the EtherNet/IP network.
Ethernet Reference Manual, publication ENET-RM002	Describes basic Ethernet concepts, infrastructure components, and infrastructure features.
System Security Design Guidelines Reference Manual, publication SECURE-RM001	Provides guidance on how to conduct security assessments, implement Rockwell Automation products in a secure system, harden the control system, manage user access, and dispose of equipment.
Industrial Components Preventive Maintenance, Enclosures, and Contact Ratings Specifications, publication IC-TD002	Provides a quick reference tool for Allen-Bradley® industrial automation controls and assemblies.
Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication SGI-1.1	Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.

Notes:

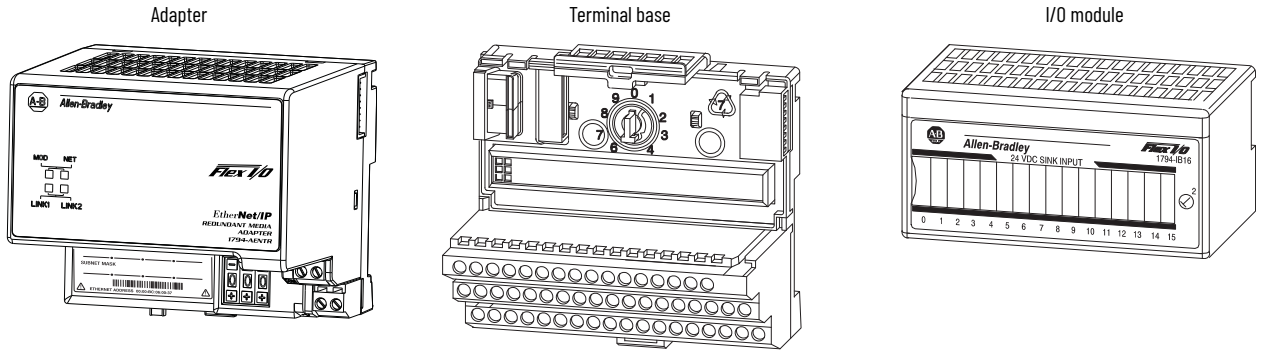
Overview of FLEX I/O and Your Redundant EtherNet/IP Adapter

This chapter provides a description of the FLEX I/O dual-port EtherNet/IP adapters and an overview of how they communicate with programmable controllers.

The FLEX I/O System

The FLEX I/O system is a small, modular I/O system for distributed applications that performs all of the functions of rack-based I/O. Figure 1 shows the components of a FLEX I/O system.

Figure 1 - FLEX I/O System Components



- Adapter – Transfers read and write configuration data to and from the I/O module
- Terminal base – Contains a terminal strip to terminate wiring for two- or three-wire devices
- I/O module – Contains the bus interface and circuitry that is needed to perform specific functions that are related to your application

The FLEX system consists of an adapter, terminal base unit, DIN rail, power supply, and adapter cabling components. You can use up to eight terminal bases per adapter.

For detailed instructions on how to set up and install your module, see Install Your FLEX I/O Adapter on page 13.

Adapter Features

The 1794-AENTR and 1794-AENTRXT adapter features include:

- Use of EtherNet/IP messages encapsulated within standard TCP/UDP/IP protocol
- Common application layer with ControlNet® and DeviceNet®
- Interfacing via Category 5 rated twisted-pair cable
- Half/full duplex 10 Mbit or 100 Mbit operation
- DIN rail mounting
- Communication to and from other FLEX I/O modules on the same DIN rail
- Communication supported by RSLinx® software
- IP address assigned via standard BOOTP/DHCP tools
- I/O configuration via Studio 5000 Logix Designer application
- No network scheduling required
- No routing tables required

Types of Adapters

The adapter refers to the following catalogs.

Catalog Number	Voltage	Module Capacity, Max	Description
1794-AENTR	24V DC	8	Dual-port EtherNet/IP adapter
1794-AENTRXT			Dual-port EtherNet/IP adapter with extended temperatures range

Hardware and Software Compatibility

The adapters and the applications that are described in this manual are compatible with the following firmware revisions and software releases. Contact Rockwell Automation if you need software or firmware updates to use this equipment.

Table 1 - Hardware and Software Compatibility

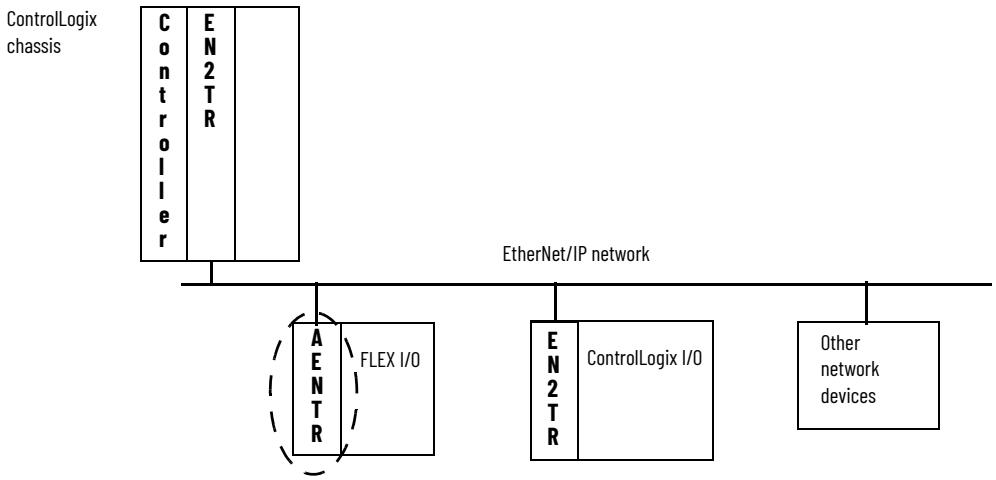
Product	Firmware Revision/ Software Version
FLEX I/O redundant EtherNet/IP adapter	1.xx or higher
ControlLogix® 5560, ControlLogix 5570, GuardLogix® 5560, and GuardLogix 5570 controllers	20 or higher
ControlLogix 5580 and GuardLogix 5580 controllers	28 or higher
CompactLogix® 5370 and Compact GuardLogix 5370 controllers	20 or higher
CompactLogix 5380 and Compact GuardLogix 5380 controllers	28 or higher
CompactLogix 5480 controller	32 or higher
Studio 5000 Logix Designer application	20 or higher
RSLinx software	2.59 or higher

See FLEX I/O and FLEX I/O-XT Selection Guide, publication 1794-SG002, a for description and overview of the 1794 series FLEX I/O and FLEX I/O-XT modules and compatible control platforms.

What the Adapter Does

The 1794-AENTR and 1794-AENTRXT adapters perform two primary tasks:

- Control of real-time I/O data (implicit messaging). The adapter serves as a bridge between I/O modules and the network.



- Support of messaging data for configuration and programming information (explicit messaging).

Use of the Common Industrial Protocol (CIP)

The 1794-AENTR and 1794-AENTRXT adapters use CIP™. CIP is the application layer protocol that is specified for EtherNet/IP, the Ethernet Industrial Protocol, as well as for ControlNet and DeviceNet. It is a message-based protocol that implements a relative path to send a message from the producing device in a system to the consuming devices.

The producing device contains the path information that steers the message along the proper route to reach its consumers. Since the producing device holds this information, other devices along the path simply pass this information; they do not need to store it.

This has two significant benefits:

- You do not need to configure routing tables in the bridging modules, which greatly simplifies maintenance and module replacement.
- You maintain full control over the route that is taken by each message, which enables you to select alternative paths for the same end device.

Understand the Producer/ Consumer Model

The CIP Producer/Consumer networking model replaces the old source/destination (master/slave) model. The Producer/Consumer model reduces network traffic and increases speed of transmission. In traditional I/O systems, controllers poll input modules to obtain their input status. In the CIP system input modules are not polled by a controller. Instead, they produce (multicast) their data either upon a change of state (COS) or periodically. The frequency of update depends upon the options that are chosen during configuration and where on the network that the input module resides. The input module, therefore, is a producer of input data and the controller is a consumer of the data.

The controller can also produce data for other controllers to consume. The produced and consumed data is accessible by multiple controllers over the EtherNet/IP network. This data exchange conforms to the Producer/Consumer model.

Specify the Requested Packet Interval (RPI)

The RPI is the update rate that is specified for a particular piece of data on the network. The RPI can be specified for the adapter and include all of the I/O modules communicating through it (using a rack-optimized connection) or specified for a particular module (using direct connection). When you add a module or an adapter to the I/O configuration of a controller, you must enter the RPI as a parameter. This value specifies how often to produce the data for that device. For example, if you specify an RPI of 50 ms, it means that every 50 ms the device should send its data to the controller or the controller should send its data to the device.

RPIs are only used for devices that produce data. For example, a ControlLogix EtherNet/IP bridge in the same chassis as the controller does not require an RPI because it is not a data-producing member of the system; it is used only as a bridge to remote racks.

Rack-optimized and Direct Connection Support

The 1794-AENTR and 1794-AENTRXT adapters support both direct and rack-optimized connections. A direct connection is a real-time data transfer link between the controller and the device that the configuration data references. Direct connection messaging occurs at a cyclic rate that is specified by the RPI during configuration. A rack-optimized connection is a grouping of data from multiple I/O module into a single block of data sent over a single connection at the same data rate.

Rack-optimized connections reduce the total number of connections that are needed to transfer data when using many I/O modules in a system. The following example illustrates the benefit of rack-optimized connections.

Assume you have set up a system that contains eight discrete I/O modules interfaced to an adapter. If you use direct connections to transfer data to each of these I/O modules, you need eight connections to transfer all of the data, one to each of the eight I/O modules. If you use a rack-optimized connection to transfer the data, you only need a single connection – The connection to the adapter.

IMPORTANT Although rack-optimized connections offer an efficient way to use resources, there are a few limitations on their use:

- You can only use rack-optimized connections to send data to and from discrete I/O modules. Analog I/O requires direct connections.
- Rack-optimized connections can contain I/O data and status information only. Additional module information, such as diagnostics, is not available through a rack-optimized connection.
- All data is sent simultaneously at the RPI rate of the adapter.

See EtherNet/IP Device Level Ring Application Technique, publication ENET-AT007, for more information on connections.

Mixing Rack-optimized and Direct Connections

You can mix communication formats for different I/O modules communicating through the same adapter. I/O modules set up to use rack optimization communicates at the rate of the RPI configured for the 1794-AENTR or 1794-AENTRXT adapter. I/O modules that are configured for direct communication communicate at their own set RPIs and ignore the adapter RPI.

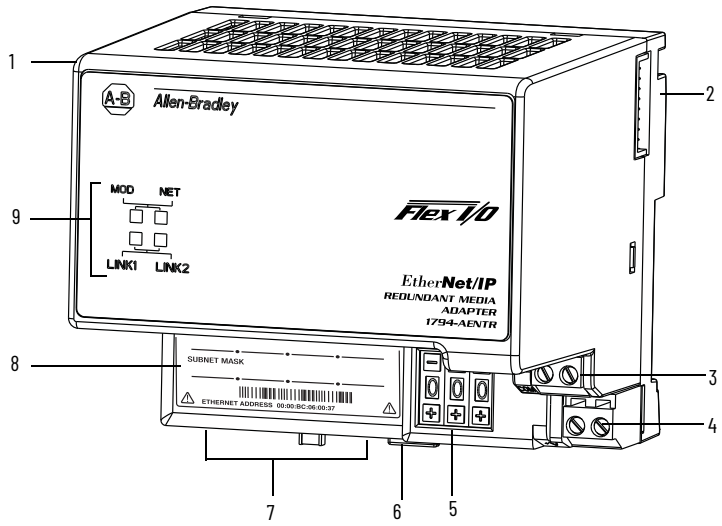
Install Your FLEX I/O Adapter

This chapter describes how to physically install the 1794-AENTR or 1794-AENTRXT adapter on a DIN rail, panel, or wall, and connect it to the EtherNet/IP network.

Module Components

Use Figure 2 to identify the external features of the FLEX I/O EtherNet/IP adapter.

Figure 2 - Dual-port EtherNet/IP Adapter – 1794-AENTR, 1794-AENTRXT

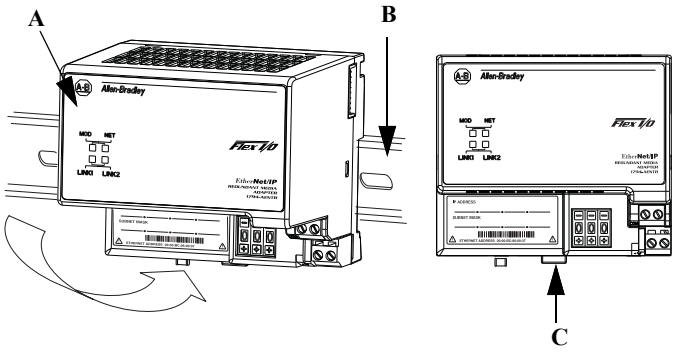


Component Identification			
1	Dual-port EtherNet/IP adapter	6	Module locking tab
2	Flexbus connector	7	Network cable RJ45 connectors (underside)
3	24V common connections	8	MAC ID label
4	24V DC connections	9	Status indicators
5	IP address switches		

Mount Your Adapter

Mount on a DIN Rail

Follow these steps to mount the adapter on a new system before installing any I/O modules.



ATTENTION: During mounting of all devices, be sure that all debris (for example, metal chips, wire strands) is kept from falling into the module. Debris that falls into the module could cause damage on power-up.

ATTENTION: Do not remove or replace an adapter while power is applied. Interruption of the backplane can result in unintentional operation or machine motion.

1. Position the adapter (A) on an IEC standard (35 x 7.5 x 1 mm) top-hat DIN rail (B) at a slight angle (DIN rail: Allen-Bradley part number 199-DR1; 46277-3; EN50022).
2. Hook the lip on the rear of the adapter onto the top of the DIN rail, and pivot the adapter onto the rail.
3. Press the adapter down onto the DIN rail until flush. Locking tab (C) snaps the adapter into position and locks it onto the DIN rail.
4. If the adapter does not lock in place, use a screwdriver or similar device to move the locking tab down while pressing the adapter flush onto the DIN rail, and release the locking tab to lock the adapter in place. If necessary, push up on the locking tab to lock.
5. Connect the adapter wiring. See Connect Wiring on page 16.

Mount on a Panel or Wall

To mount this adapter on a panel or wall, see the Panel Mounting Kit Cat. No. 1794-NM1/B Installation Instructions, publication 1794-IN135.

ATTENTION: If you insert or remove the module while backplane power is on, an electric 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.

WARNING: When used in a Class I Division 2, hazardous location, this equipment must be mounted in a suitable enclosure with proper wiring method that complies with the governing electrical codes.

Mount or Replace the Adapter on an Existing System

1. Disconnect any wiring jumpered to the adjacent terminal base.
2. Remove the Ethernet connectors from the bottom of the adapter.

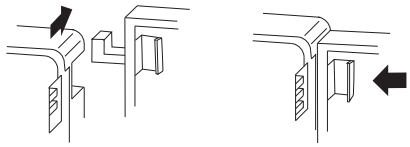
WARNING: If you connect or disconnect the communication cable with power that is applied to the adapter or any device on the network, an electric arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

3. Disconnect any user power wiring connections to the adapter.
4. Open the module latching mechanism and remove the module from the base unit to which the adapter is attached.
5. Push the Flexbus connector toward the right side of the terminal base to unplug the backplane connection.

ATTENTION: Verify that the Flexbus connector is completely clear of the adapter. The slide must be completely to the right and the raised spot on the slide visible.

6. Release the locking tab and remove the adapter.

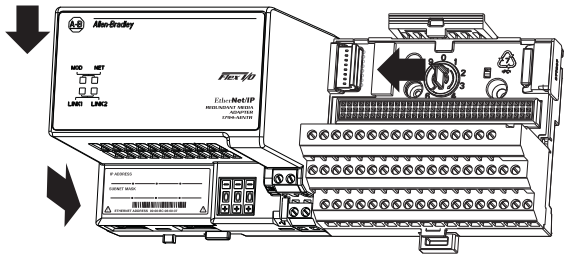
   Before installing the new adapter, notice the notch on the right rear of the adapter. This notch accepts the hook on the terminal base unit. The notch is open at the bottom. The hook and adjacent connection point keep the terminal base and the adapter tight together, reducing the possibility of a break in communication over the backplane.



7. Complete the adapter mounting as shown.

   Push down and in simultaneously to lock the adapter to the DIN rail.

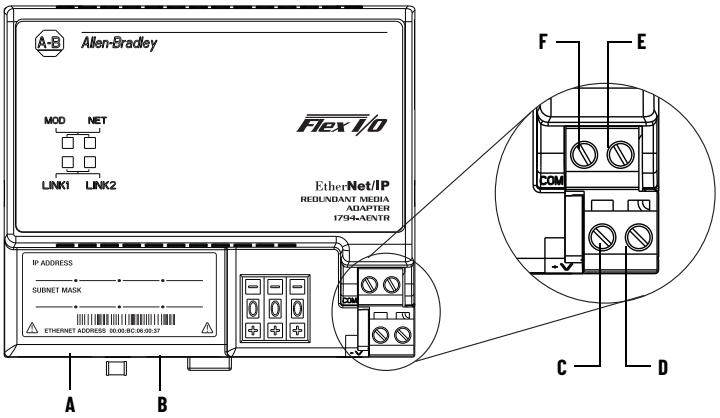
   If the adapter does not lock in place, use a screwdriver or similar device to move the locking tab down while pressing the adapter flush onto the DIN rail, and release the locking tab to lock the adapter in place. If necessary, push up on the locking tab to lock.



   When the adapter is locked onto the DIN rail, gently push the Flexbus connector into the adapter to complete the backplane.

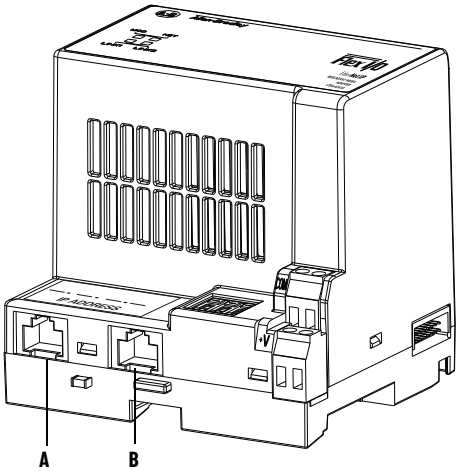
8. Reinstall the module in the adjacent terminal base unit.

Connect Wiring



WARNING: If you connect or disconnect wiring while the field-side power is on, an electric 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.

1. Connect an Ethernet network cable to the RJ45 connector (A).
2. Connect the redundant Ethernet network cable to the RJ45 connector (B).



ATTENTION: When connecting wiring, torque terminal screws C, D, E, and F to 0.8 N•m (7 lb•in).
If multiple power sources are used, do not exceed the specified isolation voltage.
Power wiring must be less than 10 m (32.8 ft.) in length.
Do not wire more than two conductors on any single terminal.

3. Connect 24V DC common to the left side of the upper connector, terminal F.
4. Connect +24V DC input power to the left side of the lower connector, terminal C.
5. Use connections D and E to pass +24V DC common (E) and 24V DC power (D) to the next module in the series (if necessary).

Set the Network Address

The adapter ships DHCP-enabled and with the thumbwheel switches set to 999. You can set the network Internet Protocol (IP) address in these ways:

- Use the pen-push thumbwheel switches on the adapter. Press either the + or the - button with a pen tip to change the number.

- Use a Dynamic Host Configuration Protocol (DHCP) server, such as Rockwell Automation® DHCP.
- Retrieve the IP address (if previously set) from nonvolatile memory.

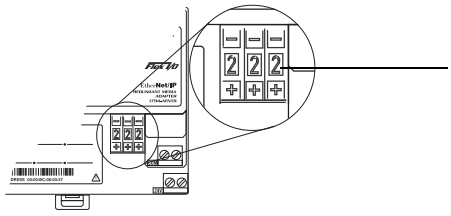
The adapter reads the thumbwheel switches first to determine if the switches are set to a valid number. You set the node address by using the three-position pen-push thumbwheel switch using a pen tip.

Press a pen tip into the center and perpendicular to the + or the - button to change the number. You only need a small amount of force to press the button (approximately 2 N).

When the switches are set to a valid number, the adapter IP address is 192.168.1.xxx (where xxx represents the number set on the switches). The adapter subnet mask is 255.255.255.0. The adapter gateway address is set differently depending on the firmware revision:

- For firmware revision 1.013 and earlier, when the address switches are set to 001...254, the adapter gateway address is set to 0.0.0.0.
- For firmware revision 1.014, when the address switches are set to 001, the adapter gateway address is set to 0.0.0.0. When the address switches are set to 002...254, the adapter gateway address is set to 192.168.1.1.

The adapter does not have a host name that is assigned, or use any Domain Name System (DNS) when using the thumbwheel settings.

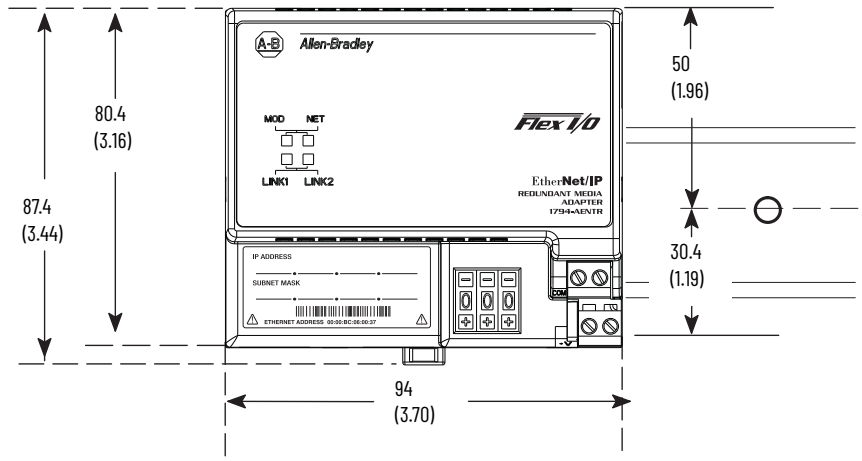


If you set the switches to an invalid number (such as 000, or a value greater than 254), the adapter checks to see if you enabled DHCP.

Mounting Dimensions

The module has the following mounting dimensions.

1794-AENTR shown



Millimeters
(Inches)

1794-AENTR, 1794-AENTRXT
87.4 H x 94 W x 92 D
(344 H x 3.7 W x 3.6 D)

Notes:

Configure the Adapter for Your EtherNet/IP Network

This chapter describes how to configure the 1794-AENTR or 1794-AENTRXT adapter for the ControlLogix 5580 system.

Configuration Requirements

Before you can use your 1794-AENTR or 1794-AENTRXT adapter, you must configure its IP address, and optionally, its subnet mask and gateway address. You can use the Rockwell Automation BOOTP/DHCP utility to perform the configuration. You can also use generic BOOTP software or, within some limitations, a DHCP server. You can use the thumbwheel switches on the module to set the IP address.

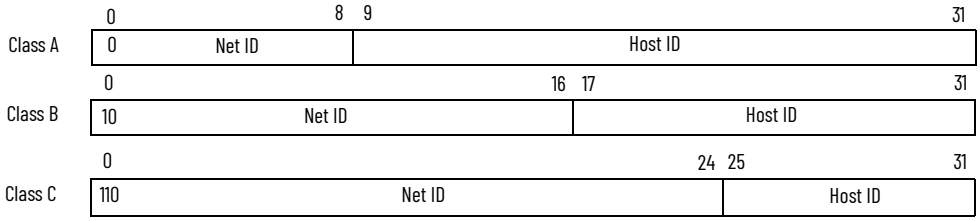
IMPORTANT When using the BOOTP protocol, you must enter the Ethernet hardware address of your adapter. Rockwell Automation assigns each 1794-AENTR or 1794-AENTRXT adapter a unique 48-bit hardware address at the factory. The address is printed on a label on the front of your 1794-AENTR or 1794-AENTRXT adapter. It consists of six hexadecimal digits that are separated by colons. This address is fixed by the hardware and cannot be changed.

If you change or replace the 1794-AENTR or 1794-AENTRXT adapter, you must enter the new Ethernet hardware address of the adapter when you configure the new adapter.

IP Address

The IP address identifies each node on the IP network (or system of connected networks). Each TCP/IP node on a network (including the 1794-AENTR or 1794-AENTRXT adapter) must have a unique IP address.

The IP address is 32 bits long and has a Net ID part and a Host ID part. Networks are classified A, B, C, or other. The class of the network determines how an IP address is formatted.



You can distinguish the class of the IP address from the first integer in its dotted-decimal IP address as follows:

Range of First Integer	Class	Range of First Integer	Class
0…127	A	192…223	C
128…191	B	224…255	other

Each node on the same physical network must have an IP address of the same class and must have the same Net ID. Each node on the same network must have a different Host ID thus giving it a unique IP address.

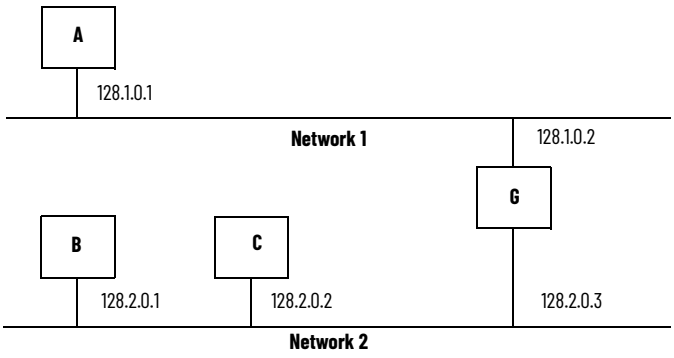
IP addresses are written as four decimal integers (0…255) separated by periods where each integer gives the value of 1 byte of the IP address.

EXAMPLE For example, the 32-bit IP address:
10000000 00000001 00000000 00000001 is written as 128.1.0.1.

Contact your network administrator or the Network Information Center for a unique fixed IP address to assign to your module.

Gateway Address

The Gateway Address is the default address of a network. It provides a single domain name and point of entry to the site. Gateways connect individual physical networks into a system of networks. When a node needs to communicate with a node on another network, a gateway transfers the data between the two networks. The following figure shows gateway G connecting Network 1 with Network 2.



When host B with IP address 128.2.0.1 communicates with host C, it knows from C's IP address that C is on the same network. In an Ethernet environment, B then resolves C's IP address into a hardware address (MAC address) and communicates with C directly.

When host B communicates with host A, it knows from A's IP address that A is on another network (the net IDs are different). To send data to A, B must have the IP address of the gateway connecting the two networks. In this example, the gateway's IP address on Network 2 is 128.2.0.3.

The gateway has two IP addresses (128.1.0.2 and 128.2.0.3). The first must be used by hosts on Network 1 and the second must be used by hosts on Network 2. To be usable, a host's gateway must be addressed using a net ID matching its own.

Subnet Mask

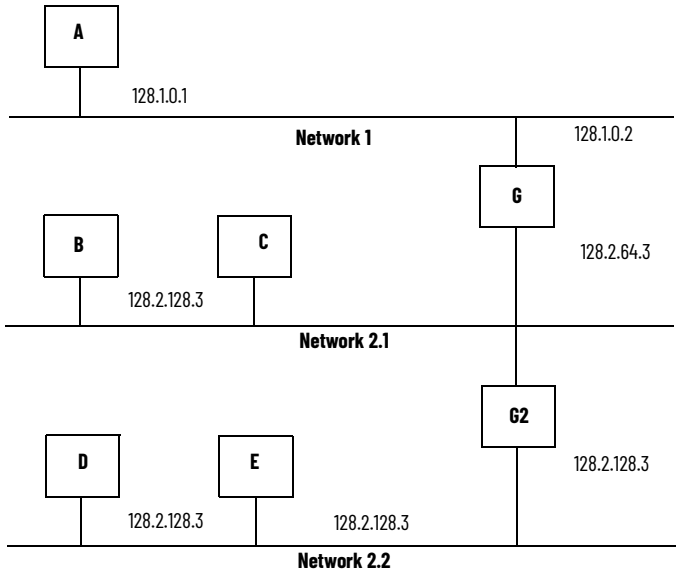
The subnet mask is used for splitting IP networks into a series of subgroups, or subnets. The mask is a binary pattern that is matched up with the IP address to turn part of the Host ID address field into a field for subnets.

EXAMPLE Take Network 2 (a Class B network) in the previous example and add another network. Selecting the following subnet mask would add two additional net ID bits, allowing for four logical networks:

```
11111111 11111111 11000000 00000001 = 255.255.192.0
                  ^^
                  These 2 bits of the host ID used to extend the net ID
```

2 bits of the Class B host ID have been used to extend the net ID. Each unique combination of bits in the part of the Host ID where subnet mask bits are 1 specifies a different logical network.

The new configuration is:



A second network with Hosts D and E was added. Gateway G2 connects Network 2.1 with Network 2.2.

Hosts D and E use Gateway G2 to communicate with hosts not on Network 2.2.
Hosts B and C use Gateway G to communicate with hosts not on Network 2.1.
When B is communicating with D, G (the configured gateway for B) routes the data from B to D through G2.

Other Methods to Set the IP Address

The FLEX I/O adapters support the following additional methods to change the IP address:

- BOOTP/DHCP tool
- RSLinx Classic software

For more information on how to use these methods, see EtherNet/IP Network Devices User Manual, publication ENET-UM006.

ATTENTION: The 1794-AENTR or 1794-AENTRXT adapter must be assigned a fixed network address. The IP address of this adapter must not be dynamically provided.
Failure to observe this precaution may result in unintended machine motion or loss of process control.

Implicit Protection Mode

Implicit Protection Mode helps prevent configuration changes that can affect system behavior and cause unintended and unforeseen changes.

This security enhancement is automatically triggered as soon as one of the following occurs:

- When an adapter has an open I/O mode connection in a RUN mode
- When an I/O module in the rack has an open I/O connection

In Protection Mode, the device deactivates services that could disrupt the operation of the device. For example, configuration operations or firmware updates are disabled to not impact the operation of the device.

Enter and Exit Implicit Protection Mode

The adapter enters Implicit Protection Mode as soon as I/O connections are established through or to the adapter. The adapter exits Implicit Protection Mode as soon as all I/O connections through or to the adapter are stopped.

Restrictions Imposed By Implicit Protection Mode

When the adapter is in Implicit Protection Mode, it helps prevent the following actions:

- Changing Ethernet configuration settings
- Changing IP address settings
- Disabling/enabling the Ethernet ports
- Updating the module firmware
- Performing a module factory reset and an adapter reset
- Disabling/enabling the web server
- Disable/enabling the Simple Network Management Protocol (SNMP) server
- Changing the settings on the Identity, Network, and Services pages under the Configuration tab in the web server
- Changing the web server login password

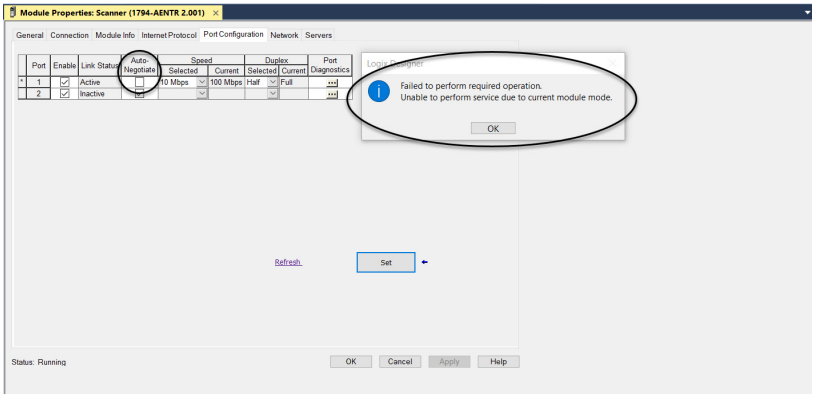
Perform Tasks When Restricted

If the adapter is in Implicit Protection Mode and you attempt to perform any of the restricted tasks, you are alerted that such a task cannot be performed because the adapter is in Implicit Protection Mode.

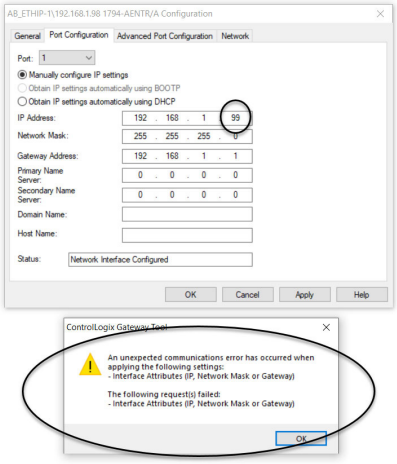
The following are example alerts that result from an attempt to set IP values on the adapter when the adapter is in Implicit Protection Mode:

IMPORTANT Protection Mode is not configurable.

- Studio 5000 Logix Designer application



- RSLinx software



If the adapter is not in Implicit Protection Mode, the adapter does not reject attempts to perform the tasks that are described previously.

For example, after the adapter is initially powered up, but no I/O connections are established yet, the adapter is not in Implicit Protection Mode, then you can attempt to update the adapter firmware revision and the adapter does not reject the attempt.

If the adapter enters Implicit Protection Mode each time the adapter powers up, check application controllers to determine if there are active I/O connections that are opened via the adapter.

Enable or Disable Web Server and SNMP Agent

You can enable or disable the web server as an added security feature from firmware revision 2.011 or later. You can enable or disable the SNMP agent using the AOP revision 25.06.26.0 or later.

Enable or Disable SNMP Agent

You can enable or disable the SNMP agent using one of the following methods:

- Module Properties window
- CIP Explicit message

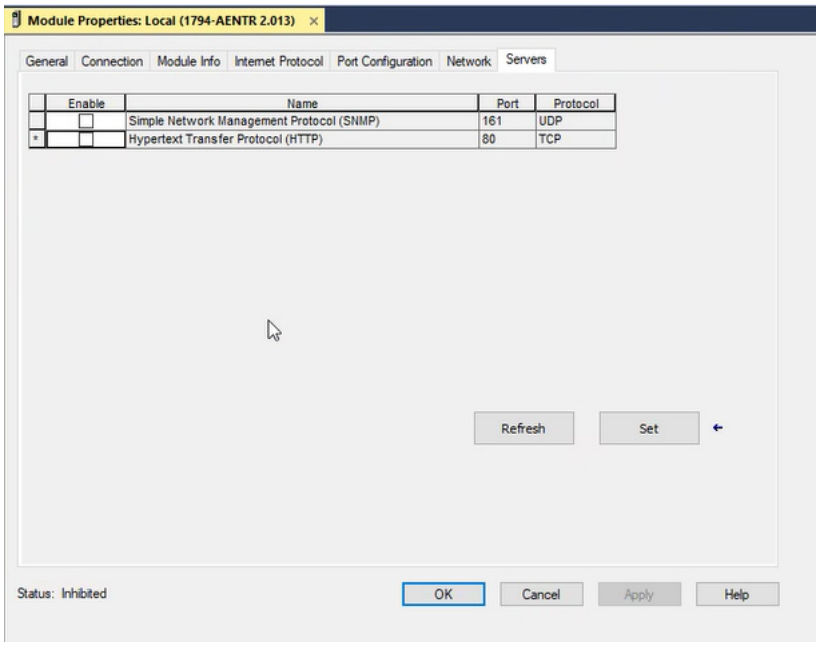
The following table shows the default behavior of the SNMP agent for each firmware revision of the adapter:

Table 2 - Default Behavior of the SNMP Agent

Firmware Revision	SNMP Agent is Enabled by Default	SNMP Agent is Disabled by Default
1.016	NA	NA
1.017	NA	NA
2.011	Yes	No
2.012	Yes	No
2.013 or later	No	Yes

Enable or Disable the SNMP Agent using Module Properties Window

1. Verify that adapter is in Inhibited Mode.
2. Open the adapter Module Properties window.
3. Go to Servers tab, then do the following:
   a. To enable SNMP, select Enable checkbox for SNMP, then select Set.
   b. To disable SNMP if it is already enabled, clear the Enable checkbox for SNMP, then select Set.
4. Select OK to close the Module Properties window.



Enable or Disable the SNMP Agent using CIP Explicit Message

Use the following CIP messages to enable or disable the SNMP agent:

- Class: 0xF5
- Instance: 1
- Attribute: NA
- Service: 0x4C

Data	Disable SNMP	0x01	0xA1	0x00	0x11	0x00
	Enable SNMP	0x01	0xA1	0x00	0x11	0x01

IMPORTANT To reduce the likelihood of exploitation and associated security risk, we recommend that you keep the SNMP agent disabled. If you need to enable SNMP agent, secure the network (for example, use a firewall). See the System Security Design Guidelines Reference Manual, publication SECURE-RM001 for guidelines.

Enable or Disable Web Server

For information on how to enable or disable the web server, see Enable or Disable the Web Server on page 49.

Notes:

Rack-optimized Discrete I/O

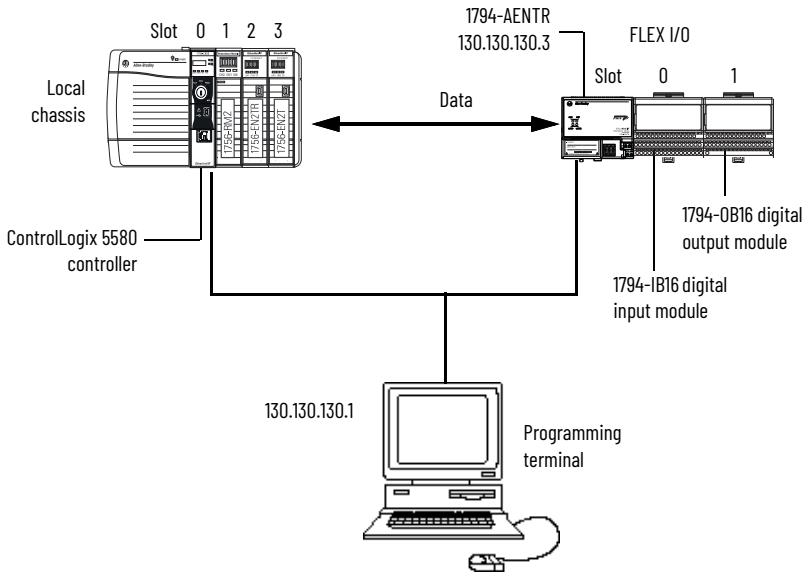
Overview

In this example, a ControlLogix processor communicates with FLEX I/O via the 1794-AENTR adapter using a rack-optimized connection. The processor reads data from all digital input modules and sends data to all digital output modules configured in a rack connection simultaneously.

Set Up the Hardware

In this example, a ControlLogix chassis contains the ControlLogix 5580 controller in slot 0 and a 1756-EN2TR bridge in slot 2. The adapter is mounted on a DIN rail with a 1794-IB16 digital input module and 1794-OB16 digital output module. You also need a power supply (not shown) for the FLEX I/O modules.

Figure 3 - Example Hardware Setup



To work along with this example set up your system as shown in Figure 3.

- In the example application, the ControlLogix 5580 controller is in the slot shown in Figure 3 in the ControlLogix chassis.
- Verify the IP addresses for your programming terminal, the controller network, and the 1794-AENTR adapter.
- Verify the position (slot) of the I/O modules on the DIN rail.
- Verify that all wiring and cabling is properly connected.
- Make sure that your communication driver (for example, AB_ETH-1 or AB-ETHIP-1) is configured in RSLinx as described in Appendix B.

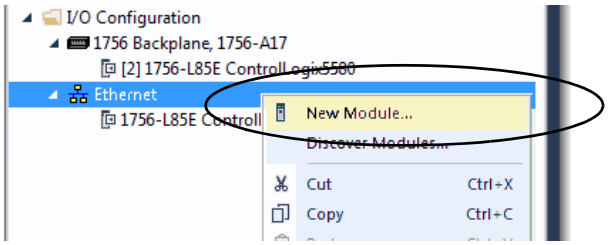
Before You Begin

You must complete the following tasks before you can configure the adapter and modules:

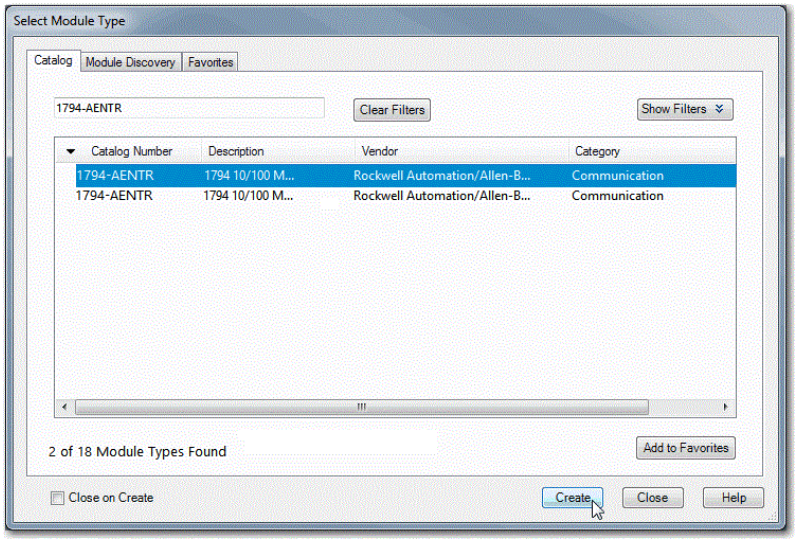
1. Create a Studio 5000 Logix Designer application project.
2. Add the ControlLogix 5580 controller to the project.

Add the Adapter to the Project

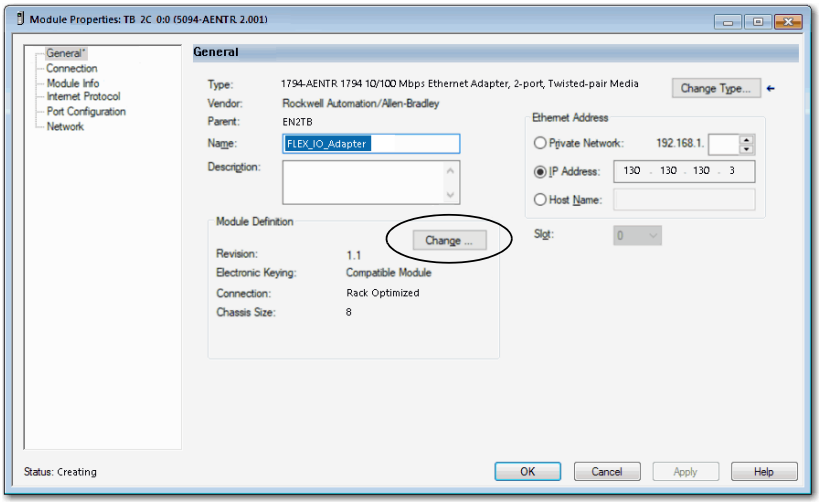
1. Verify that your project is offline.
2. Right-click your network port, and choose New Module.



The Select Module Type dialog appears.



3. Complete the following tasks:
   a. In the search field, type the catalog number for your adapter.
      This example uses the 1794-AENTR adapter.
   b. In the Catalog Number field, select the adapter.
      For some modules, the Select Major Revision dialog box can appear. If the dialog box appears, choose the major revision of the module and select OK.
   c. Select Create.
      The New Module dialog displays.



4. Complete the following tasks on the General category page:

   a. Specify the following parameters in the General tab of the New Module dialog:

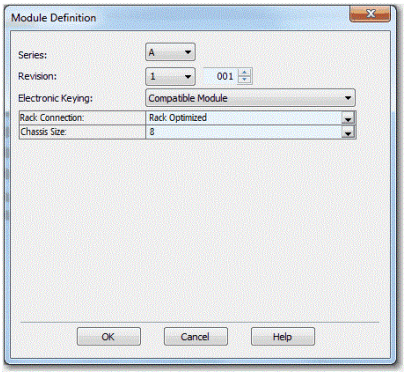
Name	FLEX_IO_Adapter
IP Address	130.130.130.3

   b. Verify that the Module Definition values are as follows:

Connection	Rack Optimized
Chassis Size	8 (default)
Electronic Keying	Compatible Module

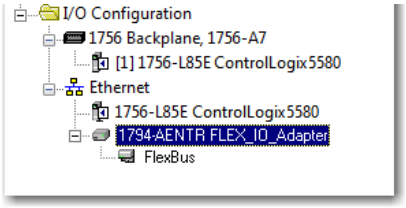
5. If you must change the values, select Change...

   The Module Definition dialog opens.



6. Select OK to accept the configuration.

   The 1794-AENTR adapter appears indented under the local 1756-L85E network in the I/O Configuration tree.



Add the FLEX I/O Modules to the I/O Configuration

You must now add the FLEX I/O modules to the I/O Configuration list under the 1794-AENTR adapter.

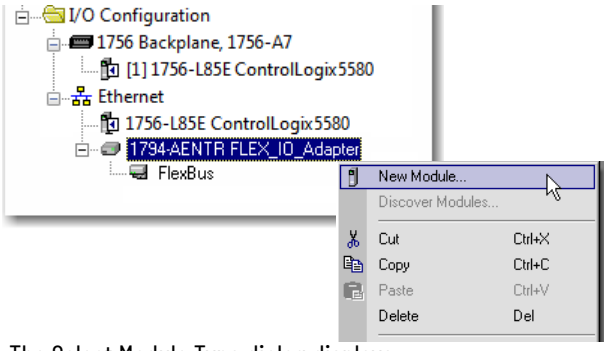
In this example, you add a 1794-IB16 digital input module and a 1794-OB16 digital output module with standard configurations. Use these steps as a guide when you are configuring different I/O modules for your system.

This example application uses I/O module default configurations.

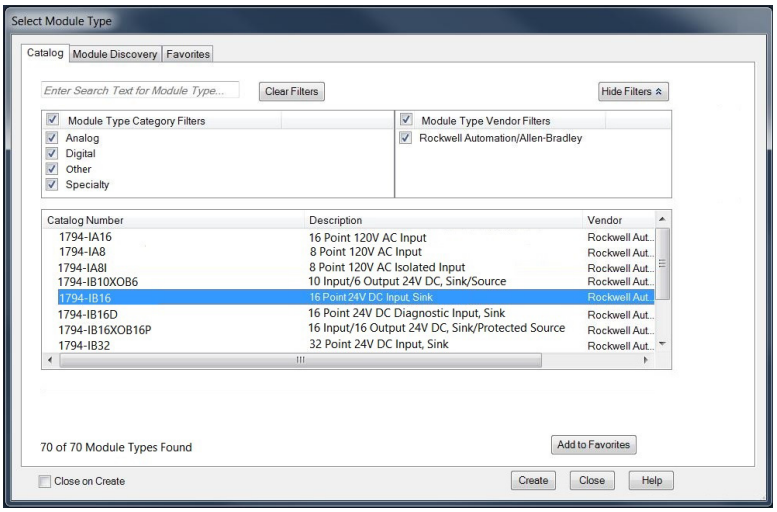
For more information, see FLEX I/O Digital Input Modules Installation Instructions, publication 1794-IN093 and FLEX I/O Digital DC Output Modules Installation Instructions, publication 1794-IN094.

Add the Digital Input Module

1. From the I/O Configuration tree, right-click the remote 1794-AENTR adapter, and then select New Module.

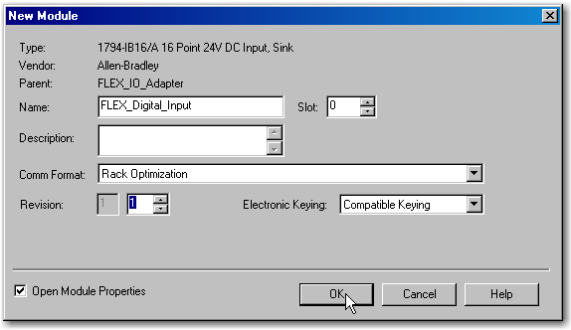


The Select Module Type dialog displays.



2. Select the 1794-IB16 module from the list, and then select Create.

The New Module dialog displays.

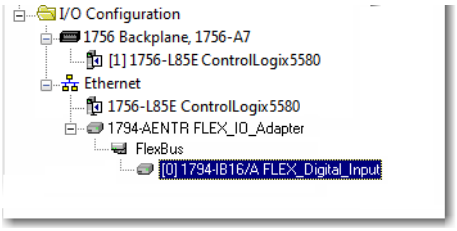


3. Enter the following parameters:

Name	FLEX_Digital_Input
Slot	0
Comm Format	Rack Optimization
Electronic Keying	Compatible Module

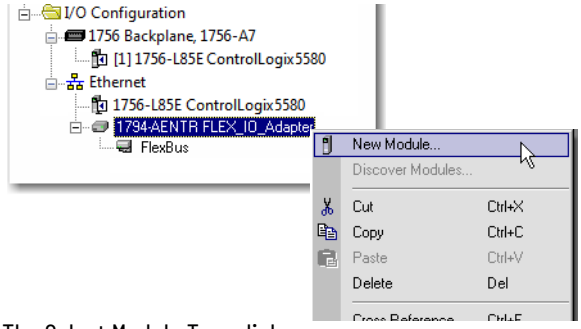
4. Select OK to save the configuration.

The digital input module appears in the I/O configuration that is indented under the 1794-AENTR adapter.

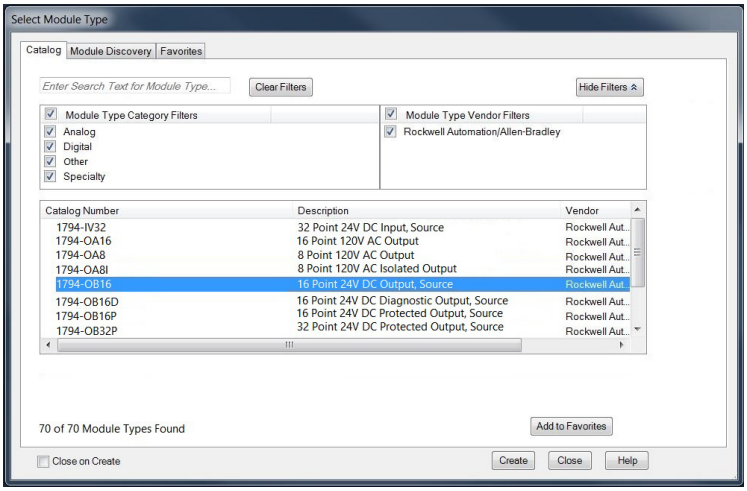


Add the Digital Output Module

1. From the I/O Configuration tree, right-click the remote 1794-AENTR adapter, and then select New Module.

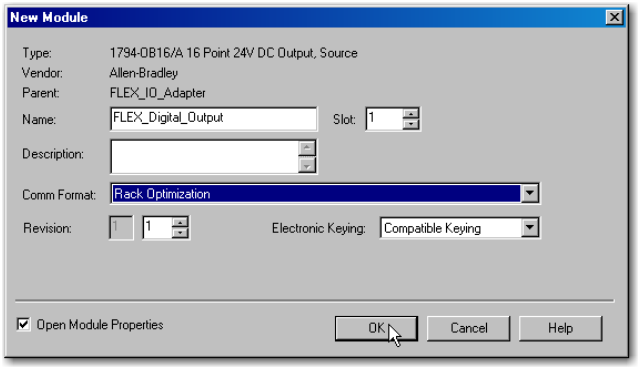


The Select Module Type dialog opens.



2. Select the 1794-OB16 module from the list, and then select Create.

The New Module dialog opens.

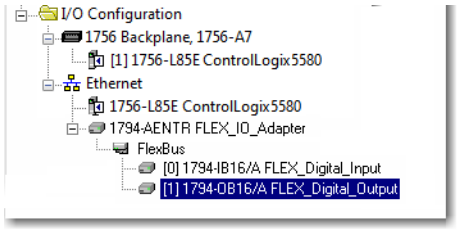


3. Enter the following parameters:

Name	FLEX_Digital_Output
Slot	1
Comm Format	Rack Optimization
Electronic Keying	Compatible Module

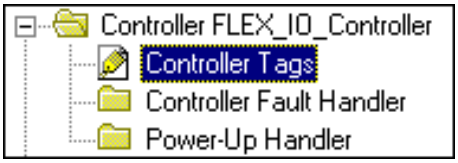
4. Select OK to save the configuration.

   The digital output module appears in the I/O configuration that is indented under the 1794-AENTR adapter.



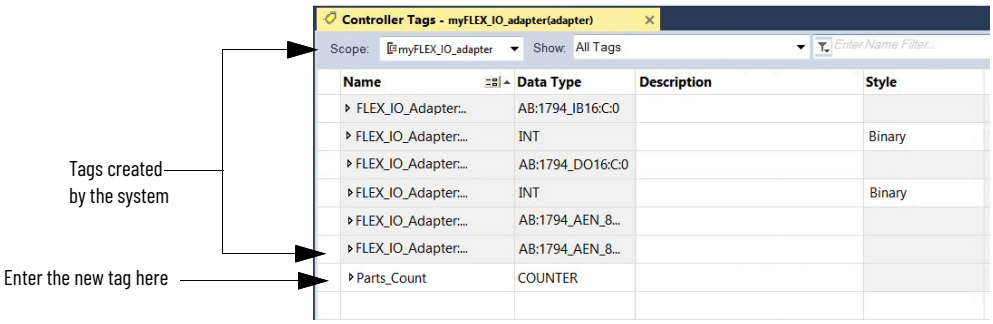
Edit the Controller Tags

When you add modules to the I/O configuration, the system creates tags for those modules to use in the application program. For the example application you must add one more Controller Tag.



1. Double-click the Controller Tags folder in the project window.

   The Controller Tags dialog opens. You see the tags that are created for the 1794-AENTR and digital I/O modules.



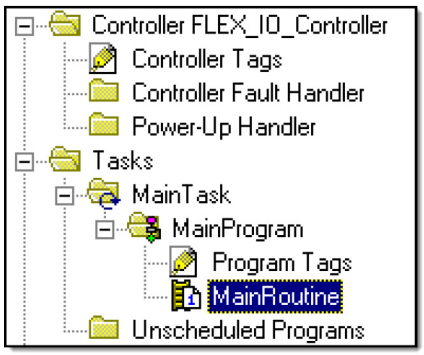
2. Make sure you select the Edit Tags tab at the bottom of the Controller Tags dialog, and then create the following tag:

Name	Data Type
Parts_Count	COUNTER

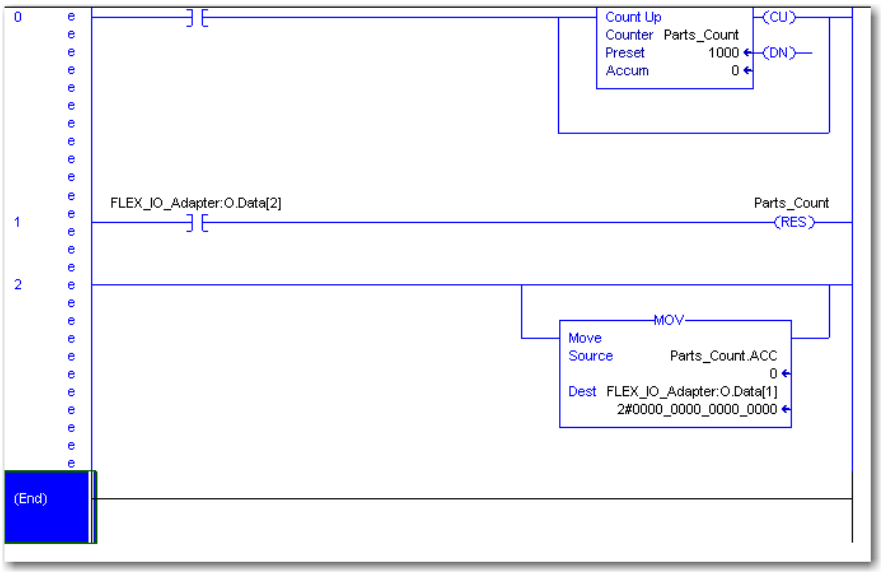
3. Close the Controller Tags dialog.

Create the Ladder Program

Next, create the example ladder program to test the I/O.



1. Double-click MainRoutine under the MainProgram folder, then enter the following ladder program, using the tag that is previously created.



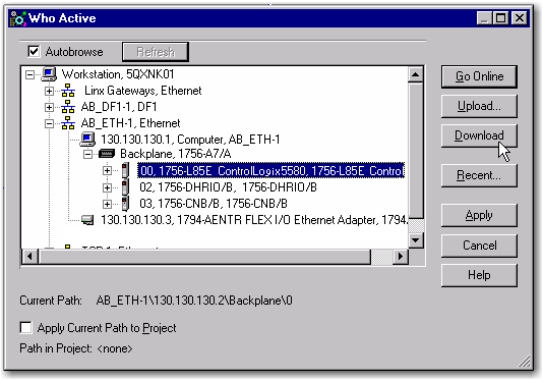
2. Save the program.

Download the Program to the Controller

To download the program to the controller do the following:

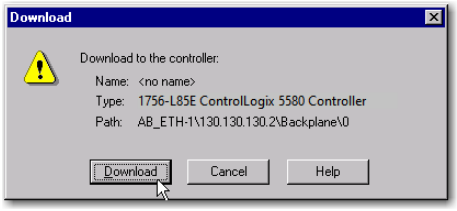
1. Select the Communications menu and select Who Active.

   The Who Active dialog opens.



2. Select your Ethernet driver (for example, AB_ETH-1) and expand the tree through the backplane of the local ControlLogix chassis.
3. Highlight the 1756-L85E ControlLogix 5580 controller and select Download.

A Download dialog appears:



4. Select Download.

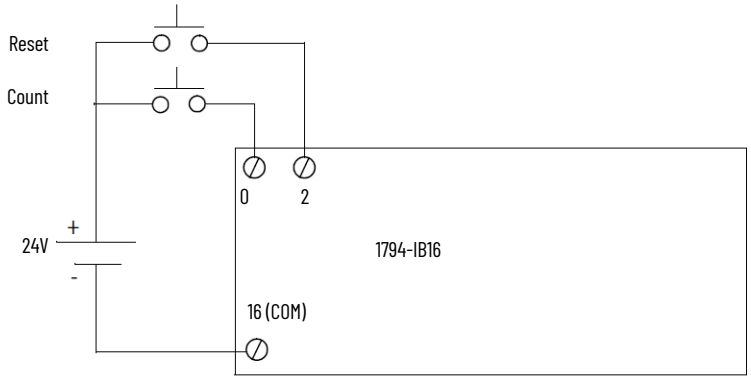
   The program downloads to the controller.

5. Minimize the Studio 5000 Logix Designer application.

Test the Example Application

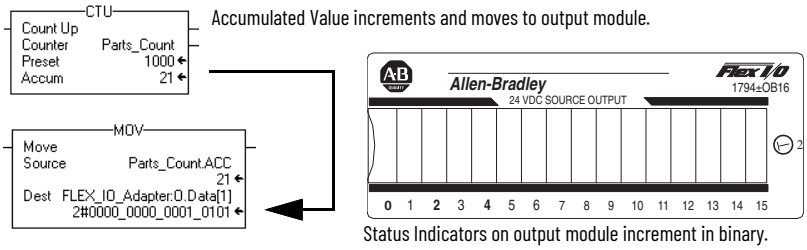
Test the example application by using a momentary switch to simulate a parts sensor.

1. Remove power from the FLEX I/O modules and wire inputs 0 and 2 of the 1794-IB16 FLEX I/O input module as shown.



2. Restore power to the FLEX I/O modules.
3. Restore the Studio 5000 Logix Designer application window and place the controller in Run mode.
4. Repeatedly press and release the momentary switch at Input 0 (Count) on the 1794-IB16 input module.

   Each time that you press the switch the Parts_Count accumulated value increments on the screen and the status indicators of the 1794-OB16 output module increment in binary.



Status Indicators on output module increment in binary.

5. Press and release the momentary switch at Input 2 (Reset) on the 1794-IB16 input module.

   The accumulated value of the Parts_Count reset to zero and all status indicators on the 1794-OB16 output module turn off.

For more information, see FLEX I/O Digital Input Modules Installation Instructions, publication 1794-IN093 and FLEX I/O Digital DC Output Modules Installation Instructions, publication 1794-IN094.

This completes the rack-optimized Discrete I/O example.

Analog I/O with Direct Connection

Overview

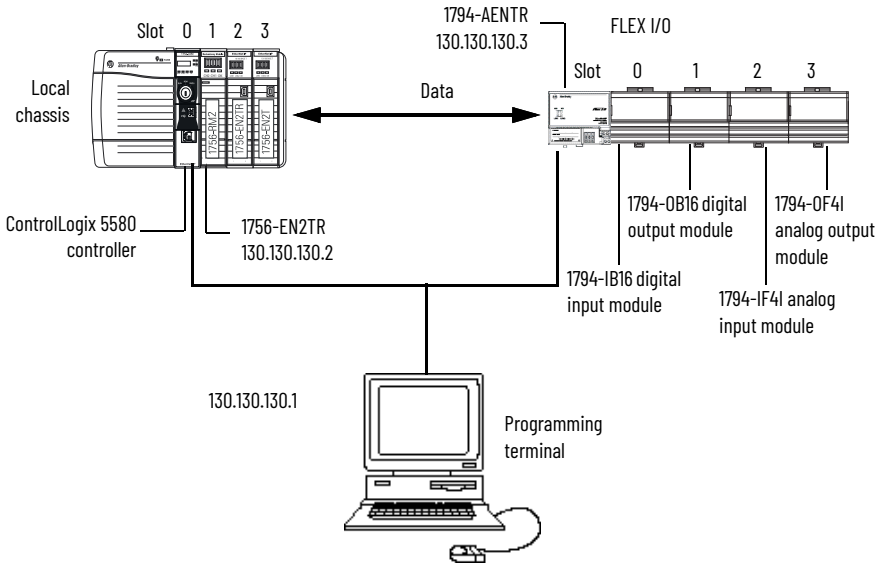
In this example you add analog input and output modules to the FLEX I/O configured with two digital I/O modules in the previous chapter. Analog modules default to direct connection, so you open a direct connection to each analog module while still using a single rack-optimized connection for the two digital I/O modules.

To test the system, the example of the previous chapter is modified to send a signal to one of the analog output channels and read the signal back in through one of the analog input channels.

Set Up the Hardware

Change the system hardware setup of the previous chapter to that shown in Figure 4, adding the FLEX I/O analog input and output modules to the DIN rail with the 1794-AENTR adapter and digital I/O modules.

Figure 4 - Example Hardware Setup

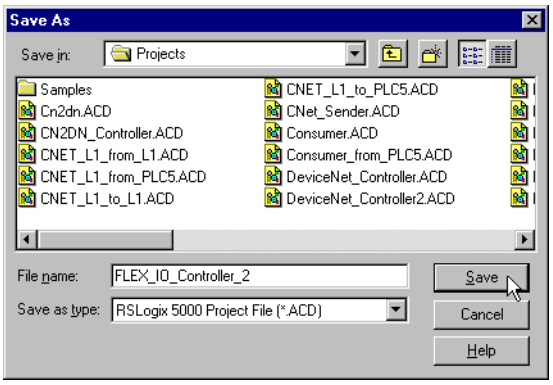


- In the example application, the ControlLogix 5580 controller is in the slot that is shown in Figure 4 in the ControlLogix chassis.
- Verify that the IP addresses for the controller network, the 1794-AENTR adapter, and the programming terminal are correct.
- Verify the position (slot) of the I/O modules on the DIN rail.
- Verify that all wiring and cabling is properly connected.
- Make sure you have your communication driver (for example, AB_ETH-1 or AB_ETHIP-1) configured in RSLinx as described in Appendix B.

Create the Example Application

Perform the following steps to create the example application:

1. Start the Studio 5000 Logix Designer application.
2. From the main dialog File menu, select the project file from the previous chapter (for example, FLEX_IO_Controller).



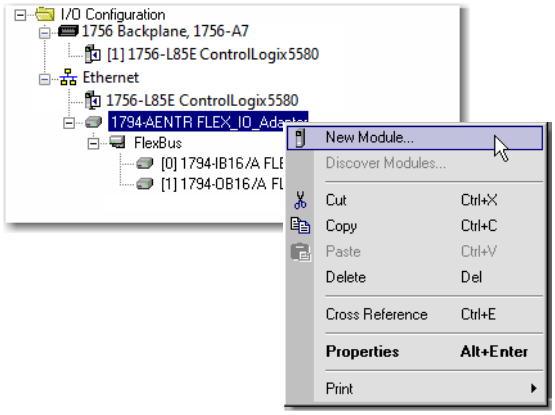
3. Save the file using a different name (for example, FLEX_IO_Controller_2).

Add the Analog Modules to the I/O Configuration

You must now add the analog I/O modules to the I/O Configuration. In this example, you add a 1794-IF4I analog input module and a 1794-OF4I analog output module. Use these steps as a guide when you are configuring different I/O modules for your system.

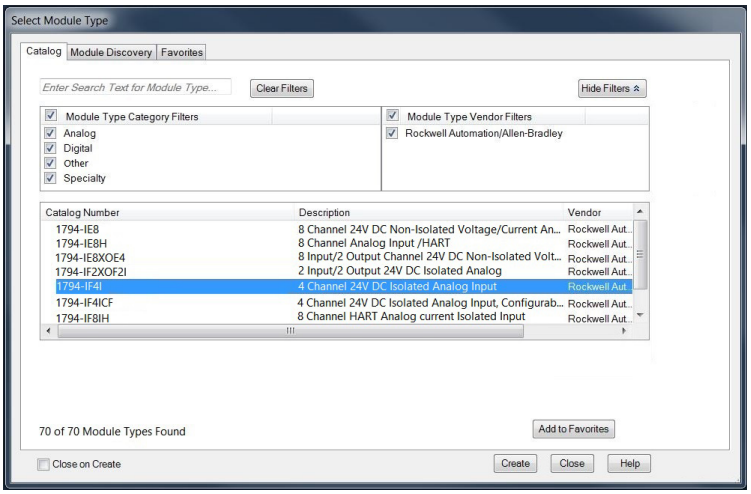
IMPORTANT Select Help on the configuration screens shown in this section if you need assistance in selecting and setting the parameters.

Add the Analog Input Module to the I/O Configuration



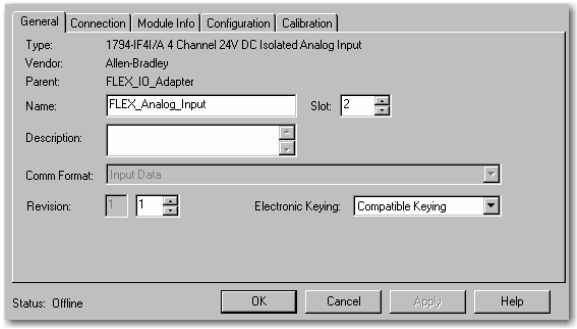
1. Right-click the 1794-AENTR adapter under the I/O Configuration folder, and then select New Module.

The Select Module Type dialog opens.



2. Select the 1794-IF4I analog input module from the list, and then select Create.

   The New Module dialog opens.



3. Enter the following parameters:

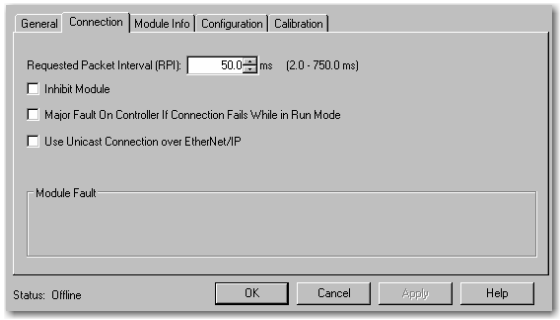
Name	FLEX_Analog_Input
Slot	2
Comm Format	Input Data[1]
Electronic Keying	Compatible Keying

(1) All analog Comm Formats use direct connection. The default here is Input Data.

4. Select OK to save the configuration.

   The Module Properties Report dialog opens.

   From the Connection view, adjust the Requested Packet Interval (RPI) to meet your system requirements.

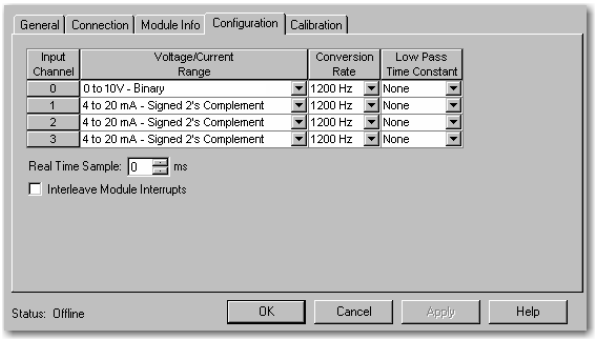


   For this example you can leave it at the default 50 ms rate.

   This RPI is used for the direct connection to this analog module.

   The two rack connected digital I/O modules continue to communicate at the RPI of the rack connection.

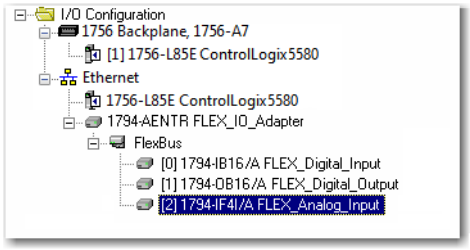
5. Select Apply to save the configuration.
6. On the Configuration tab, use the drop-down list to set the Voltage/Current Range for Channel 0 to 0...10V – Binary.



This range allows you to monitor the output with a voltmeter when you test the application. Leave the other channels at their default values.

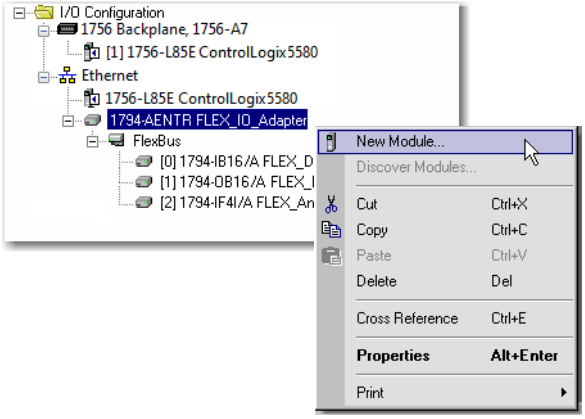
7. Select Apply to save the configuration, and then OK to close the dialog.

The analog input module appears in the I/O configuration that is indented under the 1794-AENTR adapter.

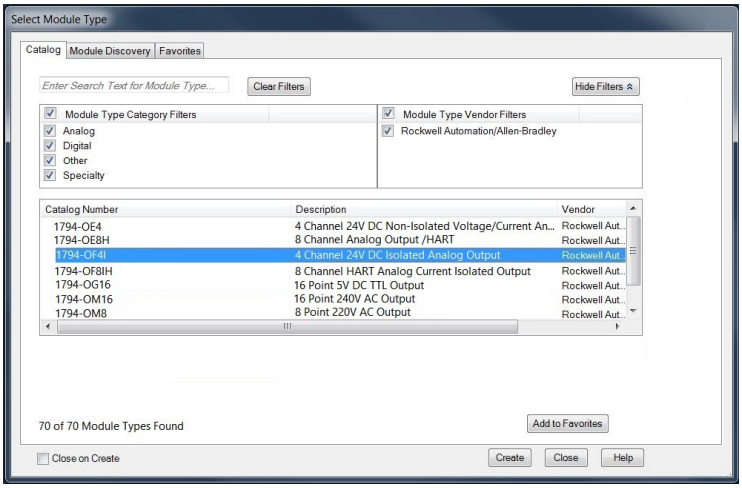


Add the Analog Output Module to the I/O Configuration

1. Under the I/O Configuration folder, right-click the remote 1794-AENTR adapter, and then select New Module.

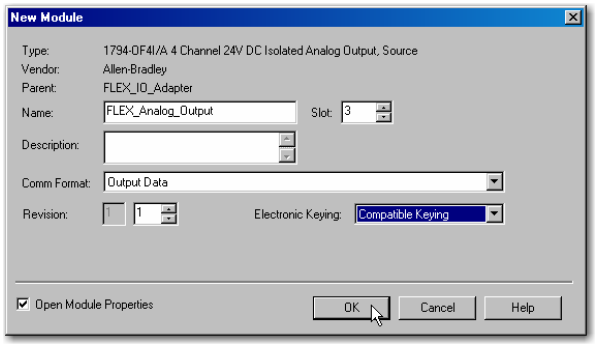


The Select Module Type dialog opens.



2. Select the 1794-OF4I module from the list, and then select Create.

   The New Module dialog opens.



3. Enter the following parameters:

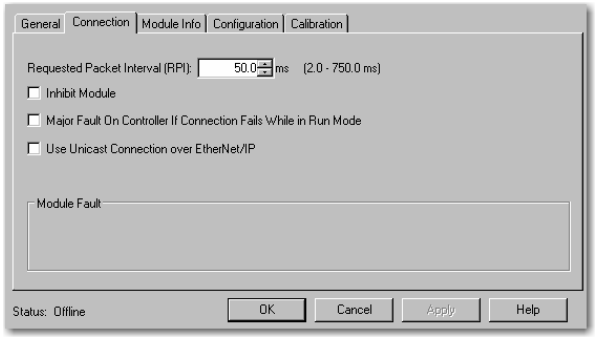
Name	FLEX_Analog_Output
Slot	3
Comm Format	Output Data[1]
Electronic Keying	Compatible Keying

(1) All analog Comm Formats use direct connection. The default here is Output Data.

4. Select OK to save the configuration.

   The Module Properties Report dialog opens.

5. On the Connection tab, adjust the RPI to meet your system requirements.



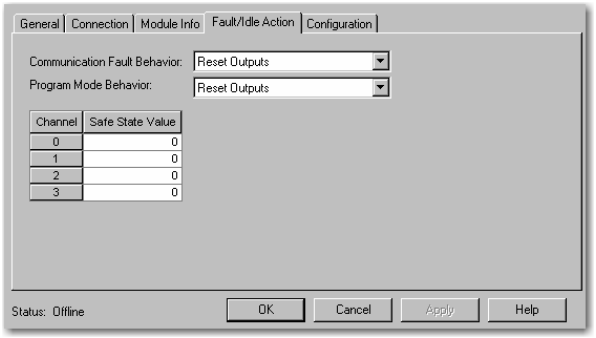
   For this example, change the RPI to 50 ms rate.

   This RPI is used for the direct connection to this analog module.

   The two rack connected digital I/O modules continue to communicate at the RPI of the rack connection.

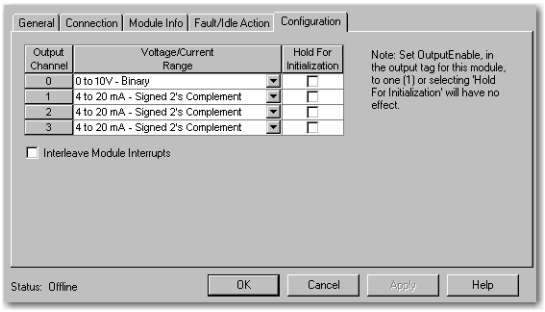
6. Select Apply to save the configuration.

7. Select the Fault/Idle Action tab.



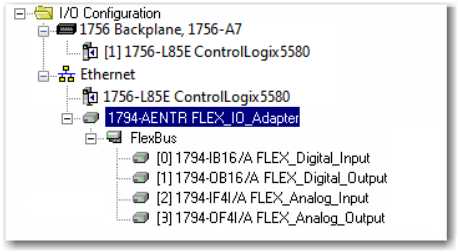
For an explanation of these parameters, select Help.

8. On the Configuration tab, use the drop-down list to set the Voltage/Current Range for Channel 0 to 0...10V – Binary to match the input configuration of the 1794-OF4I module.



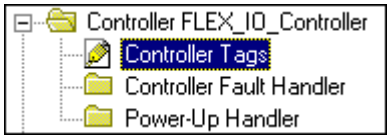
9. Select Apply to save the configuration, and then OK to close the dialog.

The analog output module appears in the I/O configuration that is indented under the 1794-AENTR adapter.

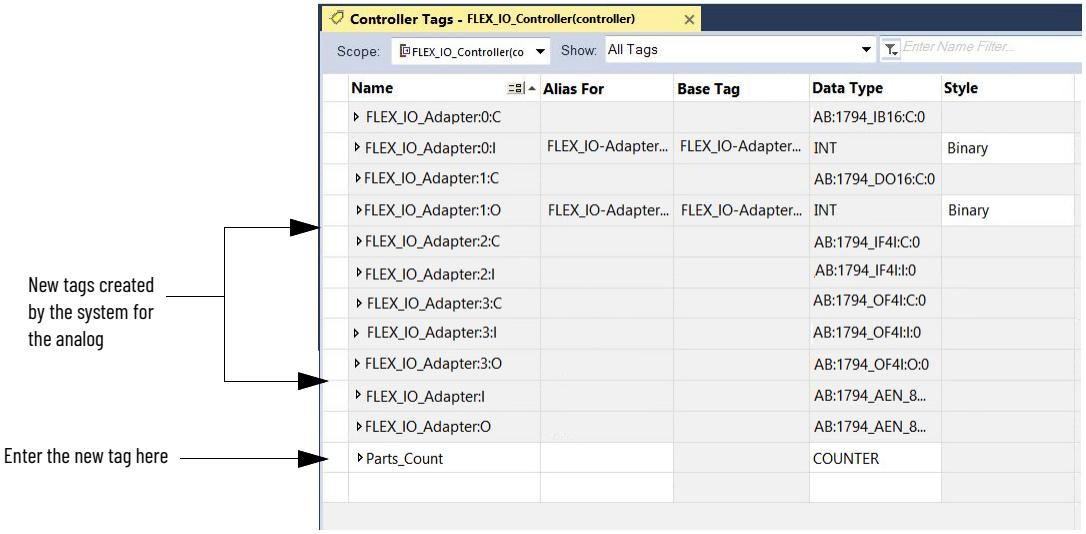


Edit the Controller Tags

When you add modules to the I/O configuration that the system creates Controller Tags for those modules. For the example program, you must add one more Controller Tag.

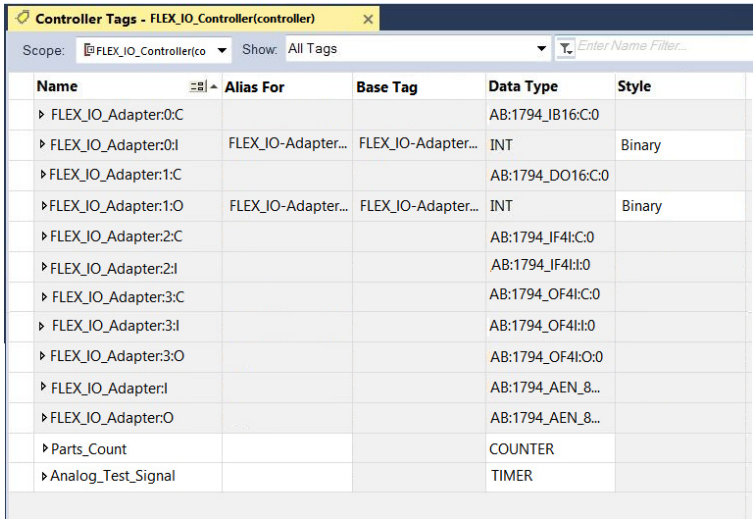


1. Double-click the Controller Tags folder in the project window.
2. New tags have been added for the analog I/O modules.



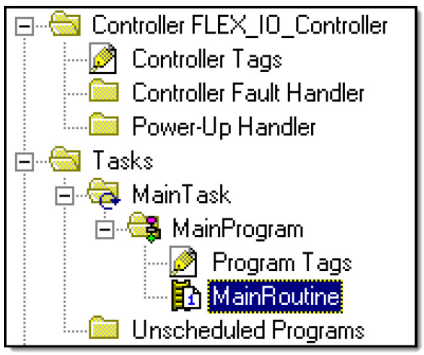
Make sure you select the Edit Tags tab at the bottom of the Controller Tags dialog, and then create the following tag:

Name	Data Type
Analog_Test_Signal	TIMER

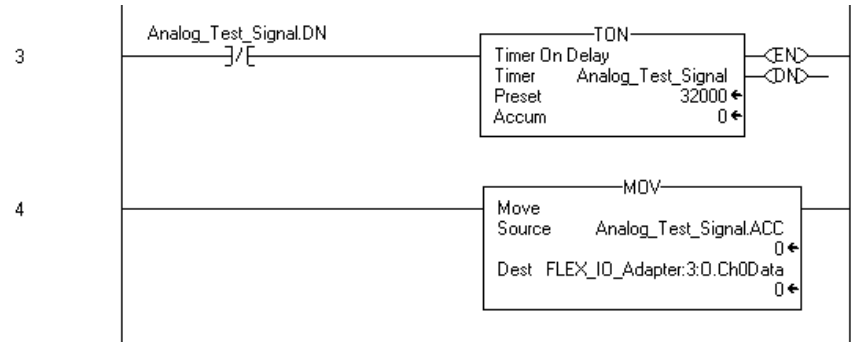


Modify the Ladder Program

Make the following change to the ladder program to test the new configuration.



1. Double-click Main Routine under the Main Program folder, and then add rungs 3 and 4 to the ladder program.



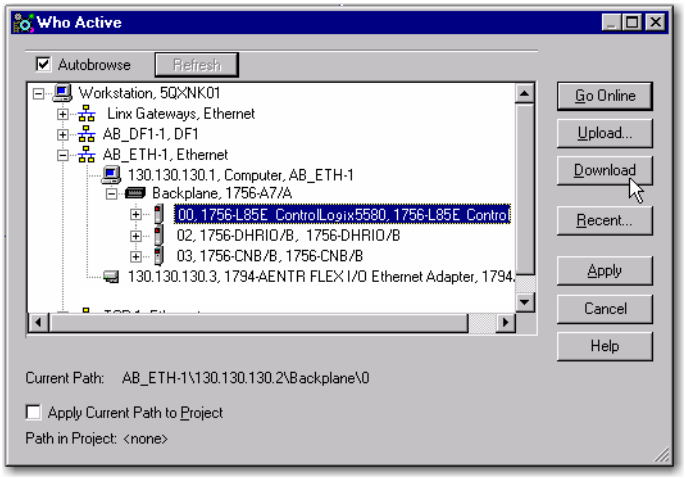
2. Save the program.

Download the Program

To download the program to the controller do the following:

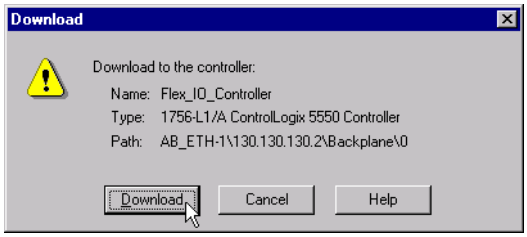
1. Select the Communications menu, and then select Who Active.

   The Who Active dialog opens.



2. Select your Ethernet driver (for example, AB_ETH-1) and expand the tree through the backplane of the local ControlLogix chassis.
3. Highlight the controller and then select Download to download the program to the 1756-L85E ControlLogix 5580 controller.

   A Download dialog appears:



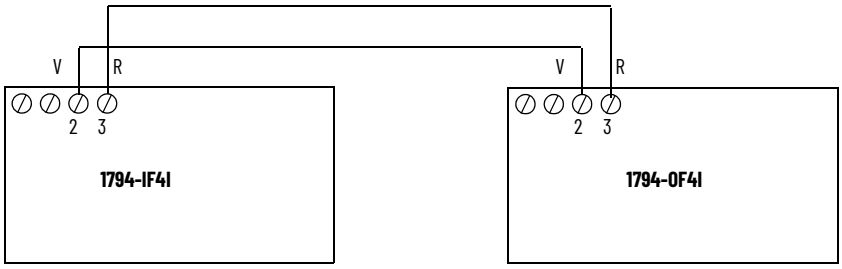
4. Select Download.

   The program downloads to the controller.
5. Minimize the Studio 5000 Logix Designer application window.

Test the Example Application

Use the following procedure to test the operation of the FLEX I/O analog input and output modules:

1. Connect analog output channel 0 on the 1794-OF4I/A module to analog input channel 0 on the 1794-IF4I/A input module.



2. Restore the Studio 5000 Logix Designer application window and place the controller in Run mode.
3. Select the Controller Tags folder, and then select the Monitor view.

Scope: Flex_IO_Controller(c Show: Show All Sort: Tag Name

Tag Name	Value	Force Mask	Style	Type
FLEX_IO_Adapter:0:C	{...}	{...}		AB:17
FLEX_IO_Adapter:0:I	2#0000_000...		Binary	INT
FLEX_IO_Adapter:1:C	{...}	{...}		AB:17
FLEX_IO_Adapter:1:O	2#0000_000...		Binary	INT
FLEX_IO_Adapter:2:C	{...}	{...}		AB:17
FLEX_IO_Adapter:2:I	{...}	{...}		AB:17
FLEX_IO_Adapter:2:I.Fault	2#0000_000...		Binary	DINT
FLEX_IO_Adapter:2:I.Ch0Data	25461		Decimal	INT
FLEX_IO_Adapter:2:I.Ch1Data	0		Decimal	INT
FLEX_IO_Adapter:2:I.Ch2Data	0		Decimal	INT
FLEX_IO_Adapter:2:I.Ch3Data	0		Decimal	INT

4. Monitor channel 0 of the 1794-IF4I input module (FLEX_IO_Adapter:2.I.Ch0Data).

   The value slowly rises to approximately 32000, resets to zero, starts rising again, and so on, as the output of the timer is received from the 1794-OF4I output module.

   For information on wiring and troubleshooting the I/O modules, see FLEX I/O Isolated Analog Output Module Installation Instructions, publication 1794-IN037 and FLEX I/O Isolated Analog Input Module Installation Instructions, publication 1794-IN038.

   This completes the direct connection analog I/O example.

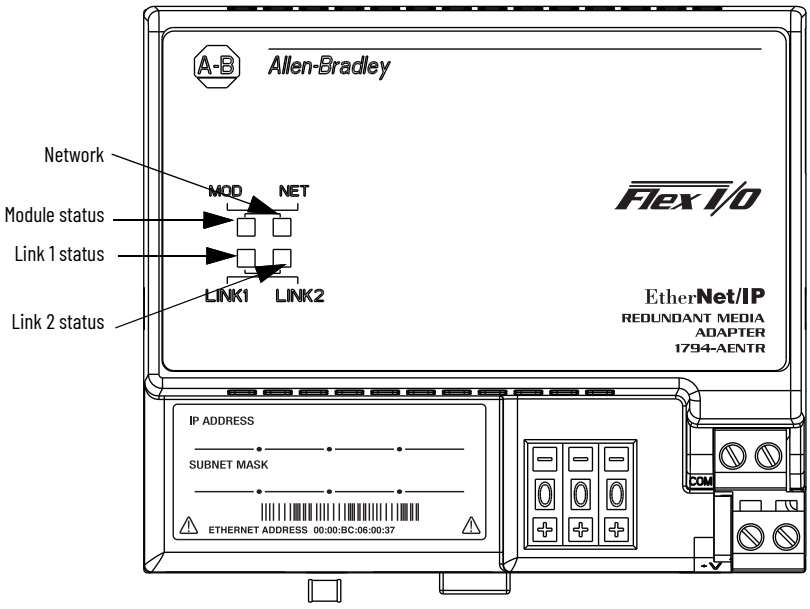
Notes:

Interpret Status Indicators

The faceplates of the 1794-AENT and 1794-AENTRXT adapters are provided with status indicators that display the Module Status, Network Status, and Link Status for both links.

Status Indicators

Figure 5 - 1794-AENTR, 1794-AENTRXT Module



1794-AENTR shown

Use Table 3 to determine the indicator conditions and status.

Table 3 - Status Indicator Identification

Indicator	State	Status
Link 1 or Link 2 (individually)	Off	No link exists. Verify network cabling. Correct as necessary.
	Solid green	Link exists at 100 Mbps.
	Flashing green	I/O is being transmitted or received at 100 Mbps.
	Flashing yellow	I/O is being transmitted or received at 10 Mbps.
	Solid yellow	Link exists at 10 Mbps.
Module Status Indicator	Off	No power. The adapter does not have 24V DC power. Make sure that power is supplied to the adapter.
	Flashing green	Standby. The adapter is not configured. Configure the adapter.
	Green	Operational. The adapter is operating correctly. No action required.
	Flashing red	Minor fault. A recoverable fault has been detected. This could be caused by an incorrect or inconsistent configuration. Check the configuration and reconfigure as needed.
	Solid red	Major fault. An unrecoverable fault has been detected. Cycle power to the adapter. If this does not clear the fault, replace the adapter.
	Flashing red/green	Self-test. The adapter is performing a power-up self-test. Wait until it is completed.

Table 3 - Status Indicator Identification (Continued)

Indicator	State	Status
Network Status Indicator	Off	Not powered. No IP address. The adapter is not powered or does not have an IP address. Verify that there is power and that the adapter is correctly wired to the power supply. Make sure that the adapter is configured.
	Flashing green	No connection. The adapter has obtained an IP address, but has no established connections.
	Green	CIP connections. The adapter has an IP address and at least one established connection.
	Flashing red	Connection timeout. One or more of the connections in which the adapter is the target has timed out.
	Red	Duplicate IP address. The adapter has detected that its IP address is already in use. Configure the adapter with a unique IP address.
	Flashing red/green	Self-test. The adapter is performing power-up self-test.

Configure the RSLinx Ethernet Communication Driver

Read this appendix to install and configure the AB_ETH driver.

About the Ethernet Communication Driver

To communicate with your 1794-AENTR or 1794-AENTRXT adapters over your network, you must configure the RSLinx Ethernet communication driver (AB_ETH). You can configure the AB_ETH driver with the IP addresses of all Ethernet devices on your system. You need this driver to download the example application programs in this manual.

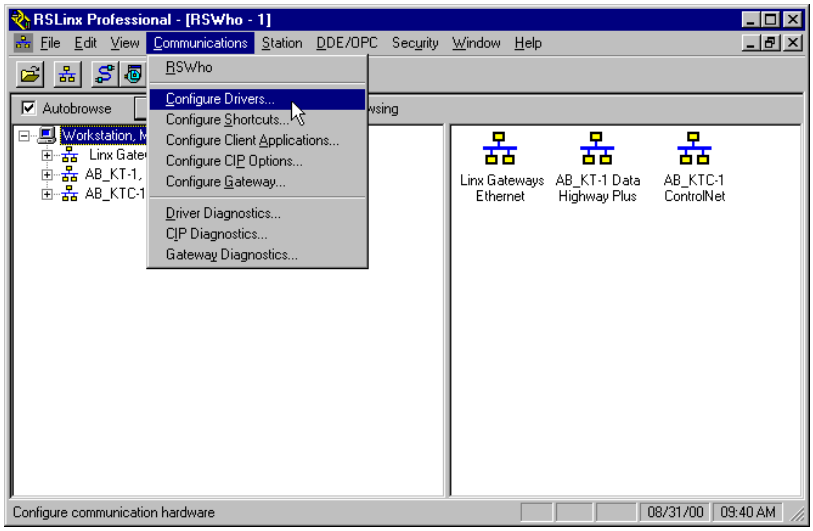
Install the RSLinx Software

You can download and install RSLinx software from the Product Compatibility and Download Center at rok.auto/pcdc.

Configure the AB_ETH Driver

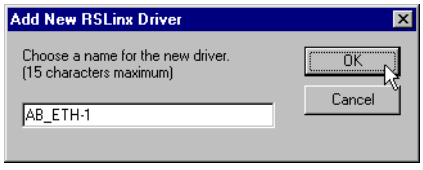
To configure the AB_ETH Ethernet communication driver perform the following steps:

1. Start the RSLinx software.



2. From the Communications menu, select Configure Drivers.
3. From the Available Driver Types drop-down menu, select Ethernet Devices, and then select Add/New.

   The Add New RSLinx Driver dialog box appears.



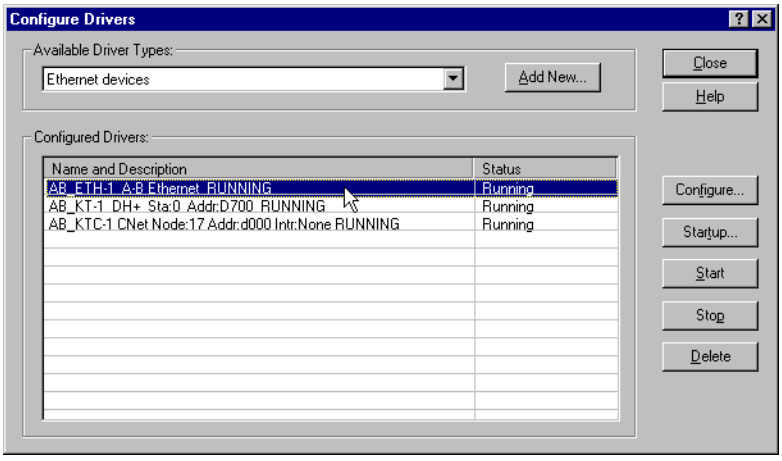
4. Select the default driver name (for example, AB_ETH-1) or type in your own name and select OK.

   The Configure driver dialog appears with the Station Mapping tab open.



5. Select Add New and enter the IP address or Host Name of your Ethernet device (for example, 130.130.130.2, "Pump1").
6. Repeat step 5 for each additional Ethernet device that you need to access.
7. When you are done entering the IP addresses, select Apply and then select OK to close the Configure driver dialog.

   The new driver appears in the list of Configured Drivers. Your list displays the drivers that you have configured on your workstation.



8. Close the RSLinx software.

Adapter Web Dialogs

Overview

The web server web pages of the FLEX I/O adapter offer extensive internal and network diagnostics. To view the web pages, enter the IP address of the FLEX I/O adapters into your browser.

Enable or Disable the Web Server

From firmware revision 2.013 onwards:

- The web server is disabled by default or when the module is reset to factory default.
- The web server monitors web page usage and locks you out of the current session if no input or movement is detected for 3 minutes. For more information, see Session Timeout – Inactivity Timeout on page 51.

The following table shows the default behavior of the web server for each firmware revision of the adapter:

Table 4 - Default Behavior of the Web Server

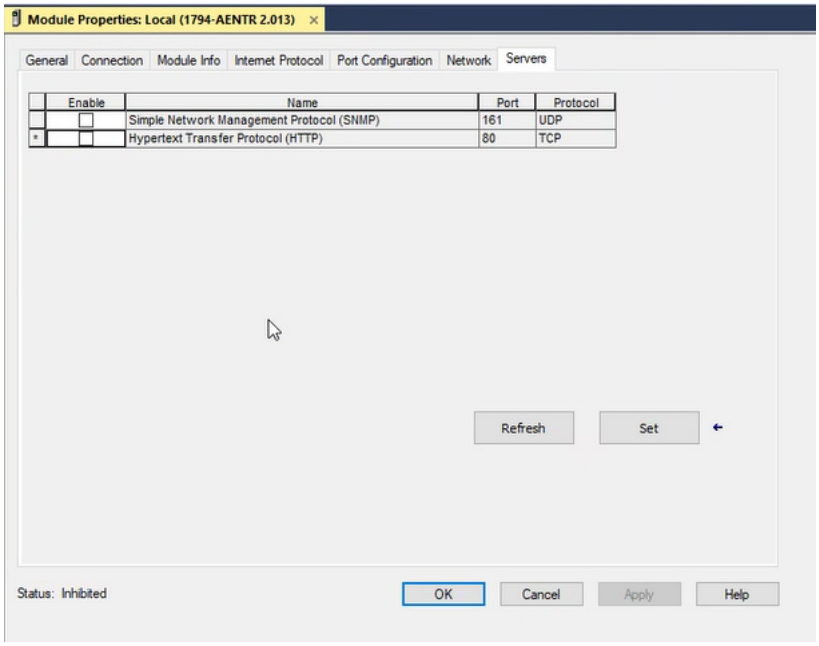
Firmware Revision	Web Server is Enabled by Default	Web Server is Disabled by Default
1.016	Yes	No
1.017	Yes	No
2.011	Yes	No
2.012	Yes	No
2.013 or later	No	Yes

You can enable or disable the web server using one of the following methods:

- Module Properties window
- CIP Explicit message

Enable or Disable the Web Server using Module Properties Window

1. Verify that adapter is in Inhibited Mode.
2. Open the adapter Module Properties window.
3. Go to Servers tab, then do the following:
   a. To enable web server, select Enable checkbox for Hypertext Transfer Protocol (HTTP), then select Set.
   b. To disable web server if it is already enabled, clear the Enable checkbox for HTTP, then select Set.
4. Select OK to close the Module Properties window.



Enable or Disable the Web Server using CIP Explicit Message

Use the following CIP messages to enable or disable the web server:

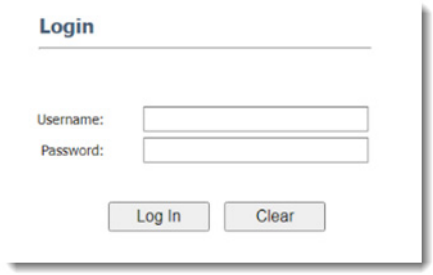
- Class: 0xF5
- Instance: 1
- Attribute: NA
- Service: 0x4C

Data	Disable web server	0x01	0x50	0x00	0x06	0x00
	Enable web server	0x01	0x50	0x00	0x06	0x01

IMPORTANT To reduce the likelihood of exploitation and associated security risk, we recommend that you keep the web server disabled. If you need to enable web server, secure the network (for example, use a firewall). See the System Security Design Guidelines Reference Manual, publication SECURE-RM001 for guidelines.

Log in to the Web Server

When you enter the IP address of the module into your web browser, the Login page appears as shown in the following example. You must authenticate with your credentials before you can access the web server.

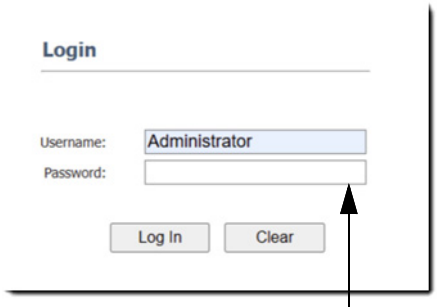


Mandatory First-time Password Change

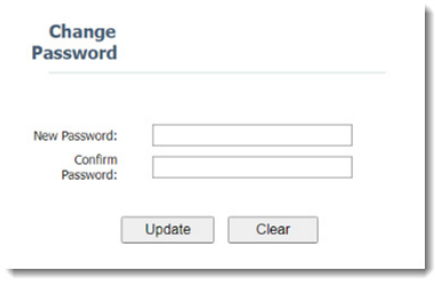
You must change the default password after you log in to the web server for a module that is in the out-of-box state, or when the module has been reset to factory default.

After you log in with the default username and password, the Change Password page appears as shown in the following examples.

Default login example



Change password example

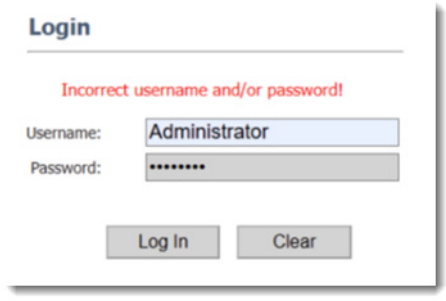


Leave the password field blank.

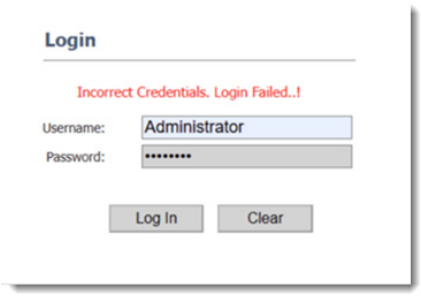
Unsuccessful Login Attempts

An “Incorrect username and/or password!” error message displays for the first and second unsuccessful attempts. On the third unsuccessful attempt, an “Incorrect Credentials. Login Failed..!” error message displays and you are locked out of the web server for one minute.

First and second unsuccessful login attempts



Third unsuccessful login attempt



Session Timeout – Inactivity Timeout

Starting with firmware revision 2.012, the web server monitors webpage usage and automatically logs out of the current session after 10 minutes of inactivity. This timeout is reduced to 3 minutes in firmware revision 2.013 or later. The web page returns to the default Login page after current session expires. If you wish to continue the session, you can log in again with your existing access.

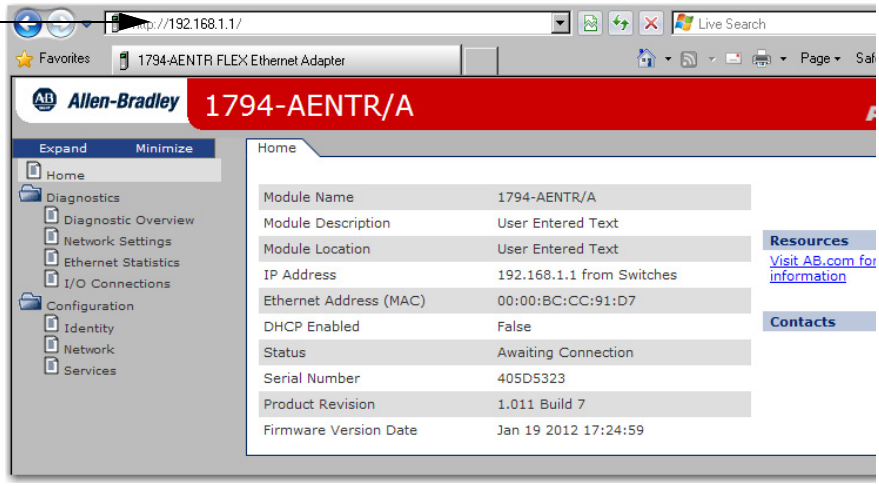
Access the Home Page of the Web Server

To display and work with the adapter diagnostics home page, follow these procedures.

IMPORTANT Make sure that your PC Internet LAN setting and your TCP/IP settings are configured to access the subnet on which your adapter communicates.

1. From your web browser, enter the adapter IP address to see the home page.

Enter the adapter IP address to see the home page.



2. From the home page, select Expand to show options, or minimize to see Diagnostics and Configuration.

Access Diagnostic Information

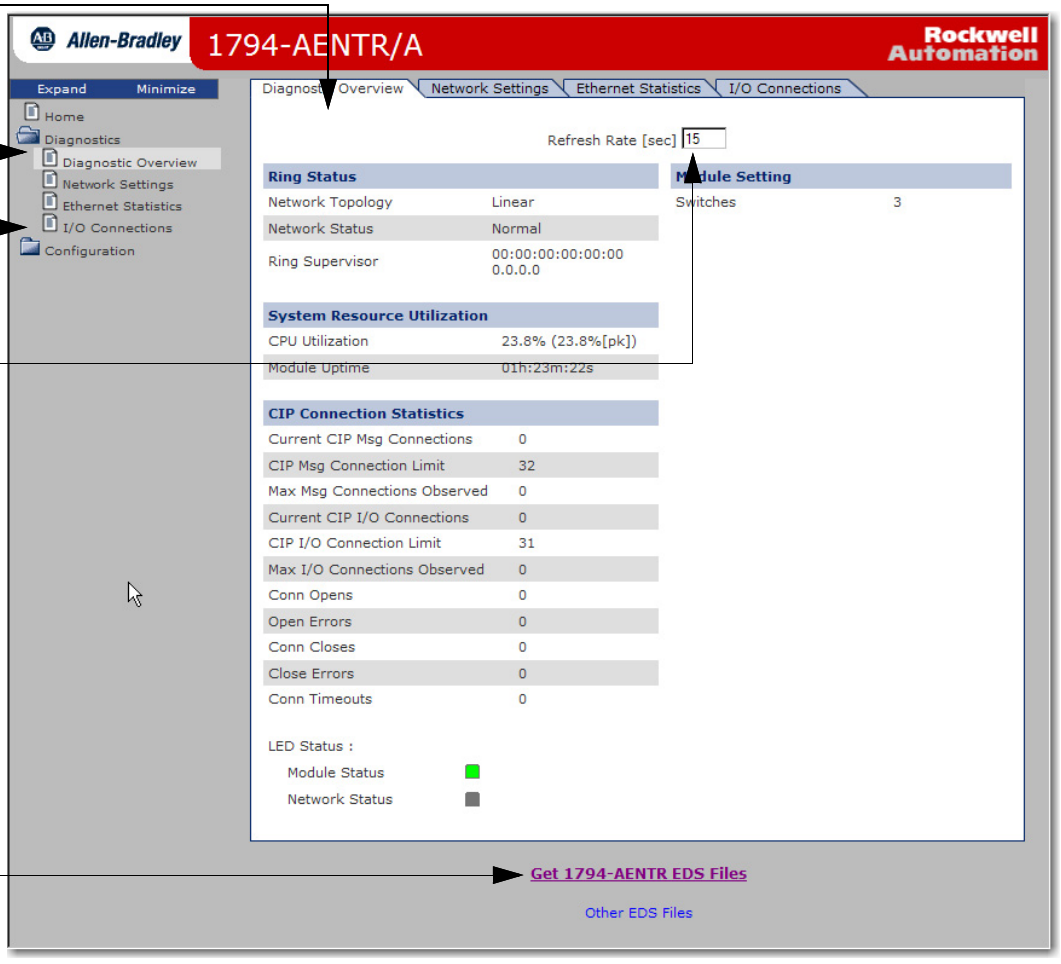
You can view FLEX I/O dual-port EtherNet/IP adapter specific diagnostic information, such as CIP Connection Statistics and Refresh Rate by selecting Diagnostic Overview on the navigational panel on the left.

Select tabs to see the corresponding page.

Select Diagnostics options to see corresponding pages.

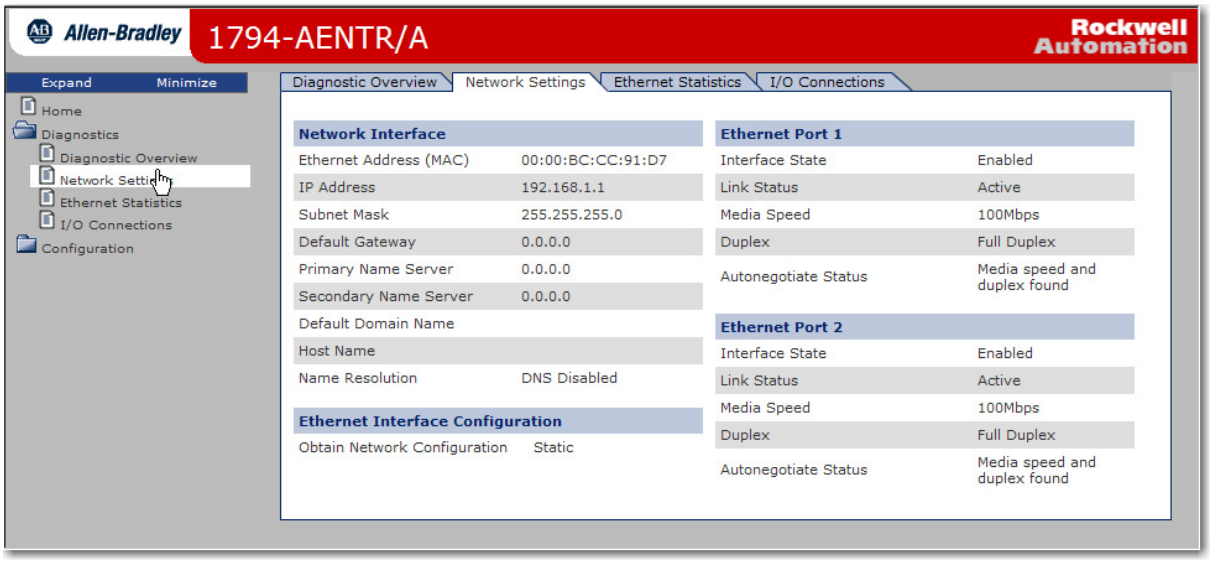
Type a refresh rate.

Download EDS files for your adapter.



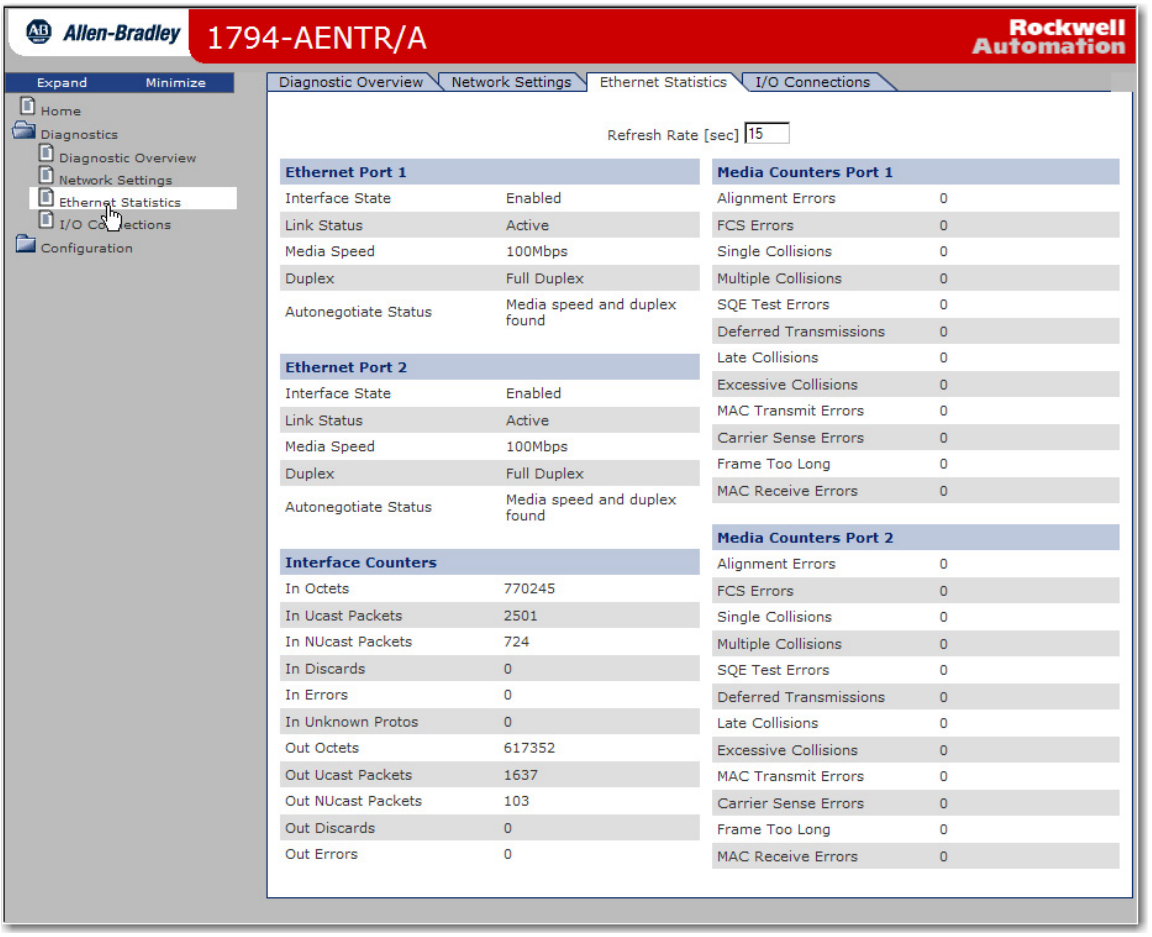
Network Settings Page

To use the Network Settings page for network-related information, select Network Settings tab at the top of the page or panel on the left.



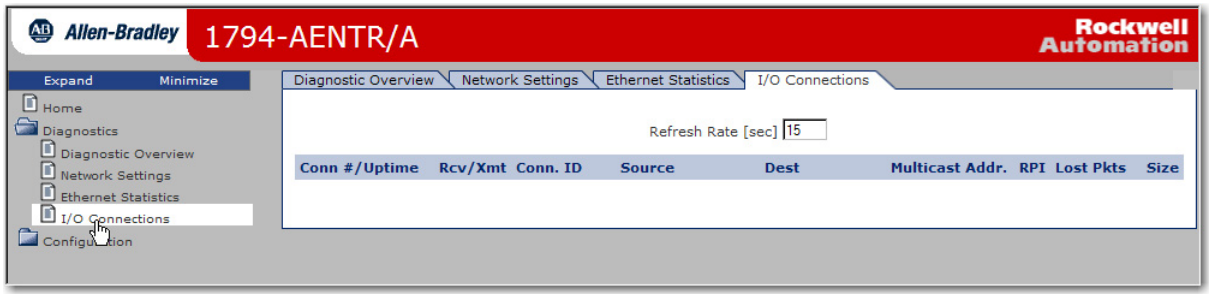
Ethernet Statistics Page

To use the Ethernet Statistics page for information about the Ethernet link and interface and media counters, select Ethernet Statistics tab at the top of the page or from the panel on the left.



I/O Connections Page

To use the I/O Connections page for CIP I/O (Class 1) connection information, select I/O Connections tab at the top of the page or panel on the left.



Access Configuration Pages

To work with the Configuration pages, follow these procedures.

IMPORTANT The values on these pages are in nonvolatile memory. Changes to these parameters do not take effect until you reset or cycle power through the FLEX I/O adapter.

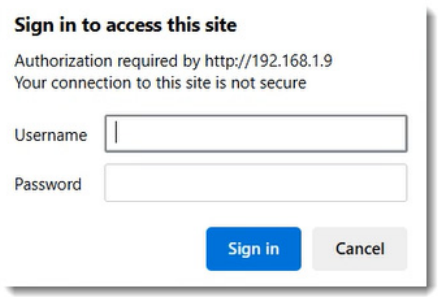
IMPORTANT If you set the value of the adapter switch to 888 and then power cycle the module, the following occurs:

- The DHCP Enabled function is enabled (set to True).
- The Ethernet link is negotiated automatically. The Auto Negotiate function is set to True.
- For adapter with firmware revision 2.012 or earlier, the web server gets enabled.
- For adapter with firmware revision 2.013 or later, the web server gets disabled.
- The Ethernet ports are disabled. Both ports are re-enabled once the switches are returned to their previous value and power is cycled.
- The password for this page resets to the factory default, which is "<blank>"

Note the value of the switches before you enter the 888 value because you must return the adapter to those values once this process is complete.

1. From the home page, select Configuration or Expand to see the Configuration options, if needed.
2. From the Configuration page, select one of the following:
   - Identity
   - Network
   - Services

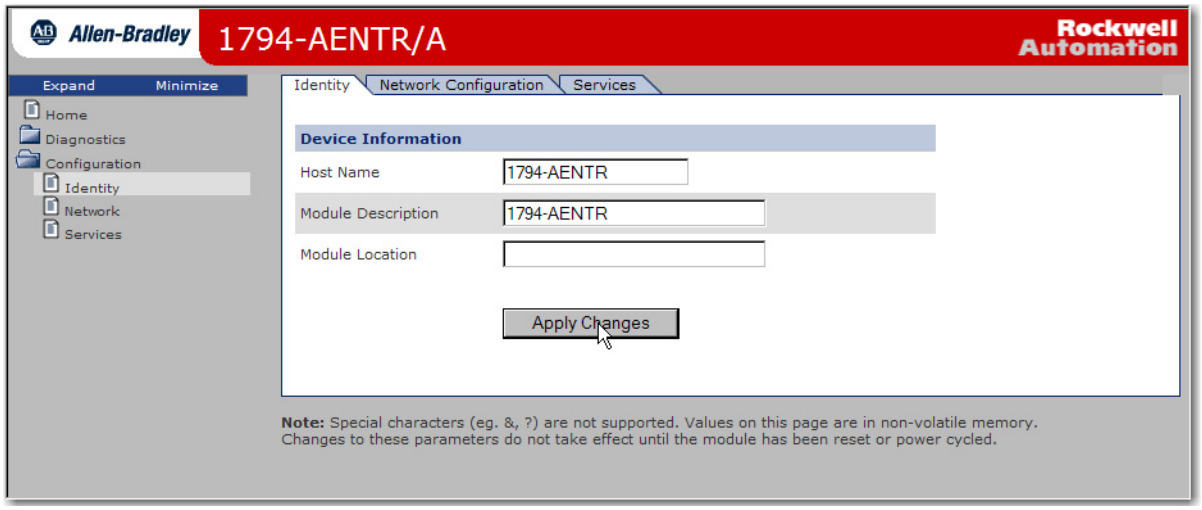
   A sign in dialog opens as shown. The dialog may vary in appearance depending on your operating system and browser.



3. To sign in, noting that the values are case-sensitive, follow these steps:
   a. Enter "Administrator" in the Username field.
   b. Enter the password you used to log in into the module's web page into the Password field.
   c. Select Sign in. After you sign in, you can go to any of the Configuration pages without having to sign in again.

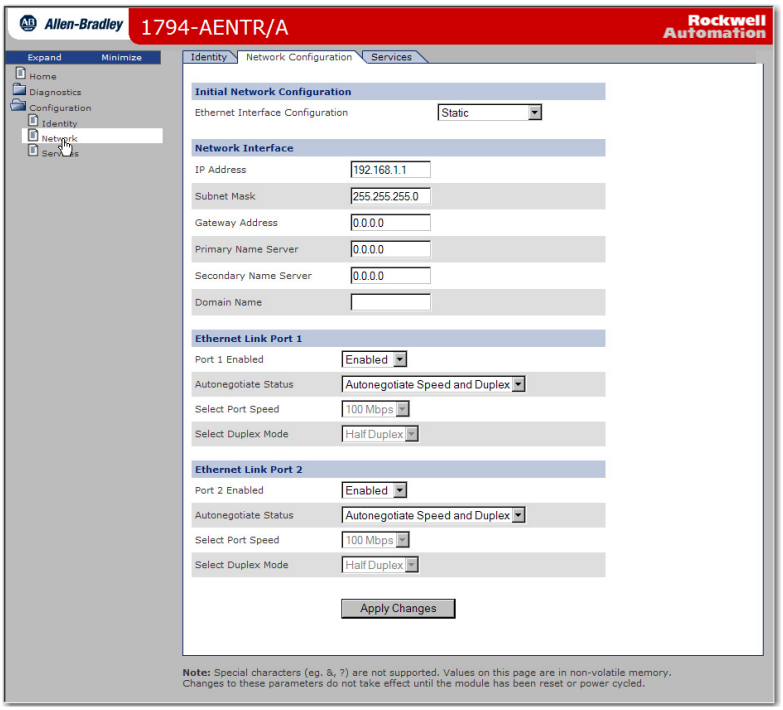
Device Identity Page

To use the Device Identity page to make entries for the device name, device description, and device location, select Device Identity from the tab at the top of the page or panel on the left.



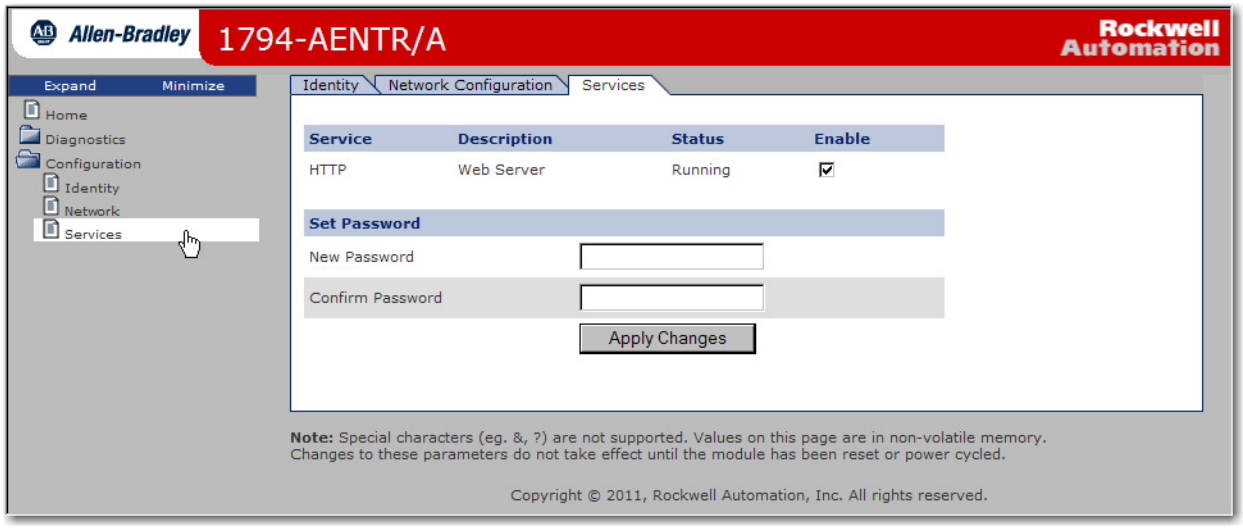
Network Configuration Page

To use the Network Configuration page to make entries for enabling or disabling DHCP and setting TCP/IP parameters and Ethernet link operation, select Network Configuration tab at the top of the page or panel on the left.



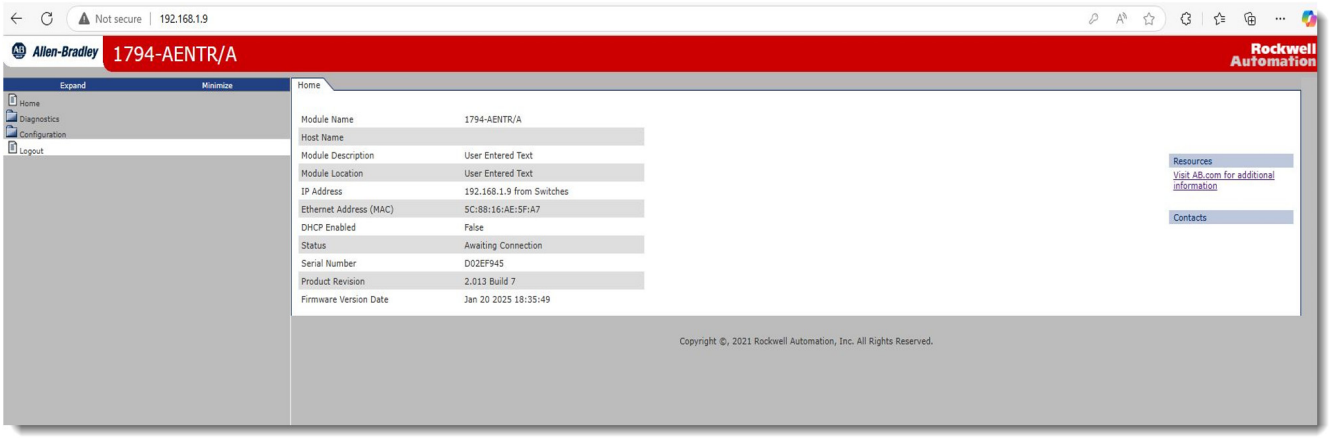
Device Services Page

To use the Services page to change the password for the Configuration webpage or disable the web server, select Device Services tab at the top of the page or panel on the left.



Web Page Logout

From firmware revision 2.013 onwards, the module's web page includes a Logout option.



Log out from the module's web page before closing the tab or browser. The Logout option disables write operations to the Configuration web pages and returns you to the default Login page. To continue, you will need to log in again with your existing credentials.

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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, Knowledgebase, and product notification updates.	rok.auto/support
Local Technical Support Phone Numbers	Locate the telephone number for your country.	rok.auto/phonesupport
Technical Documentation Center	Quickly access and download technical specifications, installation instructions, and user manuals.	rok.auto/techdocs
Literature Library	Find installation instructions, manuals, brochures, and technical data publications.	rok.auto/literature
Product Compatibility and Download Center (PCDC)	Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes.	rok.auto/pcdc

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