Allen-Bradley

POINT I/O
ControlNet Adapter

1734-ACNR

User Manual

Rockwell Automation

Important User Information

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

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

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

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

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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.

IMPORTANT

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

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
- recognize the consequence

SHOCK HAZARD

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

BURN HAZARD

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

This publication contains new and revised information not in the last release.

Revised Information

See the table for a summary of the major changes in this manual.

Chapter	Revised to include
2	Warning statement updates to the procedures that describe wiring and installing a replacement adapter
3	Before You Begin section on the following: • Understand messaging • Establish I/O connections • Configure autobaud • Understand adapter data capability
4	Update on how to add analog, discrete, other, and specialty modules to the I/O configuration

Change Bars

We marked with change bars (as shown with this paragraph) the areas in this manual that are different from previous editions and indicate the addition of new or revised information.

Notes:

Chapter 4

Configure the Adapter

Chapter 5

Diagnostics

Appendix A

1734-POINT I/O Module/RSLogix5000 Controller Tag Reference

Index

Read this preface to familiarize yourself with the rest of the manual. It provides information concerning:

- who should use this manual
- the purpose of this manual
- related documentation
- conventions used in this manual
- terminology used in this manual

Who Should Use This Manual

Use this manual if you are responsible for designing, installing, programming, or troubleshooting control systems that use the ControlNet Adapter.

You should have a basic understanding of electrical circuitry and familiarity with relay logic. If you do not, obtain the proper training before using this product.

Purpose of the Manual

This manual is a reference guide for the ControlNet Adapter.

It describes the procedures you use to install, program and troubleshoot your module.

This manual also includes several application examples.

Related Documentation

The following documents contain additional information concerning Allen-Bradley products. To obtain a copy, contact your local Allen-Bradley office or distributor.

Many of these publications are available online from http://literature.rockwellautomation.com/.

For specifications concerning the 1734-ACNR adapter, refer to POINT I/O ControlNet Adapter Installation Instructions, publication 1734-IN582.

Publication	Publication Number
ControlNet Cable System Planning and Installation Manual	CNET-IN002
ControlNet Coax Tap Installation Instructions	1786-5.7
Industrial Automation Wiring and Grounding Guidelines	1770-4.1
POINT I/O Digital and Analog Modules and POINTBLOCK I/O Modules User Manual	1734-UM001
POINT I/O Technical Data	1734-TD002
POINT I/O RS-232 ASCII Module User Manual	1734-UM009
POINT I/O RS-232 ASCII Module Installation Instructions	1734-IN588
POINT I/O ControlNet Adapter Installation Instructions	1734-IN582
POINT I/O 24V dc Expansion Power Supply Installation Instructions	1734-IN058
POINT I/O Field Potential Distributor Installation Instructions	1734-IN059
POINT I/O 120V ac Input Module Installation Instructions	1734-IN010
POINT I/O Input Module Installation Instructions	1734-IN051
POINT I/O Encoders/Counter Module User Manual	1734-UM006
POINT I/O 5V Encoders/Counter Module Installation Instructions	1734-IN005
POINT I/O 220V ac Input Module Installation Instructions	1734-IN008
POINT I/O RTD and Isolated Thermocouple Input Module	1734-IN011
POINT I/O Thermocouple and RTD Input Module User Manual	1734-UM004
POINT I/O Input Module Installation Instructions	1734-IN052
POINT I/O 120/220V ac Output Module Installation Instructions	1734-IN009
POINT I/O Protected Output Module Installation Instructions	1734-IN056
POINT I/O Protected Output Module Installation Instructions (OB2EP)	1734-IN586
POINT I/O 2 Voltage Output Analog Module Installation Instructions	1734-IN002
POINT I/O Protected Sink Output Module Installation Instructions	1734-IN585
POINT I/O 2 Relay Output Module Installation Instructions (OX2)	1734-IN587

Publication	Publication Number
POINT I/O 2 Relay Output Module Installation Instructions (OW2)	1734-IN055
POINT I/O Synchronous Serial Interface Absolute Encoder Module	1734-UM007
POINT I/O Cold Junction Compensation Wiring Base Assembly	1734-IN583
POINT I/O Wiring Base Assembly Installation Instructions	1734-511
POINT I/O 5V dc and 24V dc Very High Speed Counter Module	1734-IN003
Very High Speed Counter Module User Manual	1734-UM003
ControlLogix Redundancy System User Manual	1756-UM523
Getting Results with RSLogix5000	9399-RLD300
RSLinx Getting Results Guide	LNXENT-GR001
RSNetWorx for ControlNet Getting Results	CNET-GR001

Common Techniques Used in This Manual

We use the following conventions throughout this manual.

- Bulleted lists such as this one provide information, not procedural steps.
- Numbered lists provide sequential steps or hierarchical information.
- Steps written in the format I/O Configuration>New Menu identify the main menu first and the sub menu second.

Terminology

The following table lists ControlNet terminology used throughout this manual.

Term	Meaning
Actual Packet Interval (API)	The measure of how frequently a specific connection produces its data.
Connection ID (CID)	An identifier assigned to a transmission that is associated with a particular connection between producers and consumers that identifies a specific piece of application information.
Network Update Time (NUT)	Repetitive time interval in which data can be sent on the link.
Requested Packet Interval (RPI)	The measure of how frequently the originating application requires the transmission of data from the target application.
Scheduled	Data transfers that occur in a deterministic and repeatable manner on predefined NUTs.
Unconnected Service	The messaging service that does not rely on the set-up of a connection between devices before allowing information exchanges.
Unscheduled	Data transfer that use the remaining time in the NUT after the scheduled transfers have been completed.

About the Module

Chapter Objectives

This chapter describes the ControlNet adapter (Catalog Number 1734-ACNR) and contains the following main sections.

- adapter description and features
- hardware components that include diagnostic indicators, a network access port (NAP), and network address switch assemblies

This manual addresses the 1734-ACNR, Series A adapter that is compatible with ControlLogix, FlexLogix, and SoftLogix (5800). It is not compatible with PLC-5 and SLC processors. Use a Series B adapter (not released when we wrote this manual) with PLC-5 and SLC processors.

The 1734-ACNR adapter manages data transfers between controllers on the ControlNet network and POINT I/O modules plugged into the POINTBus backplane.

IMPORTANT The 1734-ACNR adapter requires Series C POINT I/O modules or later.

The ControlNet network is a communication architecture that enables the exchange of messages between ControlNet products compliant with the ControlNet International specification.

The 1734-ACNR adapter features include a variety of control system solutions, a local communication network access through the network access port (NAP), and redundant media.

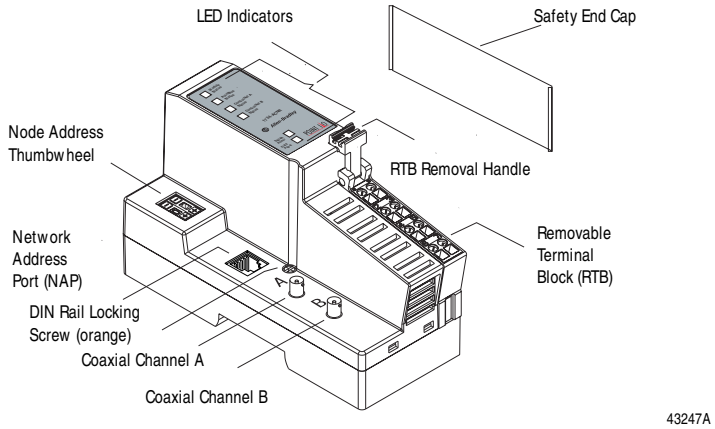
Hardware Components

Refer to the figure to see major components of the adapter.

Diagnostic Indicators

Health indicators on the front panel of the adapter describe both normal operation and error conditions in your remote I/O system.

For a description of the diagnostic indicators and status display and how to use them for troubleshooting, see the Diagnostics chapter of this manual.



Network Access Port (NAP)

The network access port provides a bidirectional electrical interface for programming, maintenance, and I/O monitoring devices in both redundant and non-redundant connections.

Refer to the ControlNet Cable System Planning and Installation User Manual, publication CNET-IN002 for more information.

Network Address Switch Assemblies

You must set two switch assemblies to configure your adapter with its unique network (node) address.These switches are on the front of the module. Read these switches on power up to establish the network address of the module.

TIP For optimum throughput, use lower numbers and assign sequential addresses to ControlNet nodes.

Install Your Adapter

Chapter Objectives

This chapter describes the procedures for installing your adapter, including how to:

- determine power requirements
- set the network address switches
- install the ControlNet adapter
- wire the ControlNet adapter
- connect programming terminals to the network via the NAP
- install the I/O modules
- install a replacement adapter to an existing system

Determine Power Requirements

The 1734-ACNR adapter requires a typical 24V dc power supply with a maximum of 10.2 watts of power @ 28.8 volts. It provides 5 watts @ 5 volts for the POINTBus and dissipates 5 watts @ 28.8 volts.

The ControlNet adapter provides a maximum backplane output current of 1.0A. See the Specifications section of this manual for:

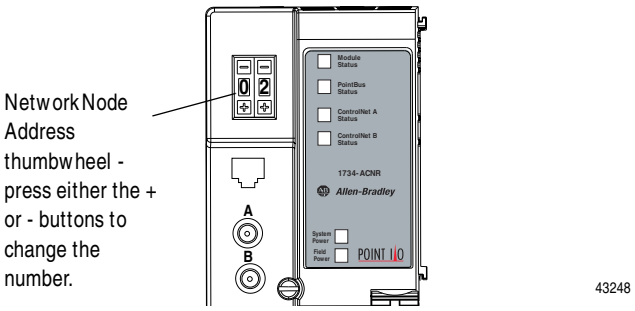
- backplane current consumption for each POINT I/O catalog number
- current consumption for each of the POINT I/O modules connected to the 1734 adapter

Extend backplane current beyond 1.0A with a 1734-EP24DC Backplane Extension Power Supply.

- Use a 1734-EP24DC power supply to supply up to an additional 1.3A of backplane current.
- Use multiple 1734-EP24DC power supplies to reach the maximum limit of 63 base modules if 25 or fewer of these modules are analog.

Set the Node Address

Set the node address using the 2-position thumbwheel switch. Valid settings range from 01 to 99. Press either the + or - buttons to change the number.



Install the Adapter

To install the adapter on the DIN rail prior to installing other base units, proceed as follows:

ATTENTION

You must use Series C POINT I/O modules with the 1734-ACNR adapter. Series A and B POINT I/O modules will not work with the 1734-ACNR adapter.

1. Position the adapter vertically above the DIN rail.
2. Press down firmly to install the adapter on the DIN rail.

   The locking mechanism will lock the adapter to the DIN rail.

WARNING

If you connect or disconnect the ControlNet cable with power applied to this module or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations.

Be sure that power is removed or the area is nonhazardous before proceeding.

3. Set the node address on the node address thumbwheel.
4. Remove the safety end cap by sliding it up.

   This exposes the backplane and power interconnections.

ATTENTION

Do not discard the end cap. Use this end cap to cover the exposed interconnections on the last mounting base on the DIN rail. Failure to do so could result in equipment damage or injury from electric shock.

Wire the Adapter

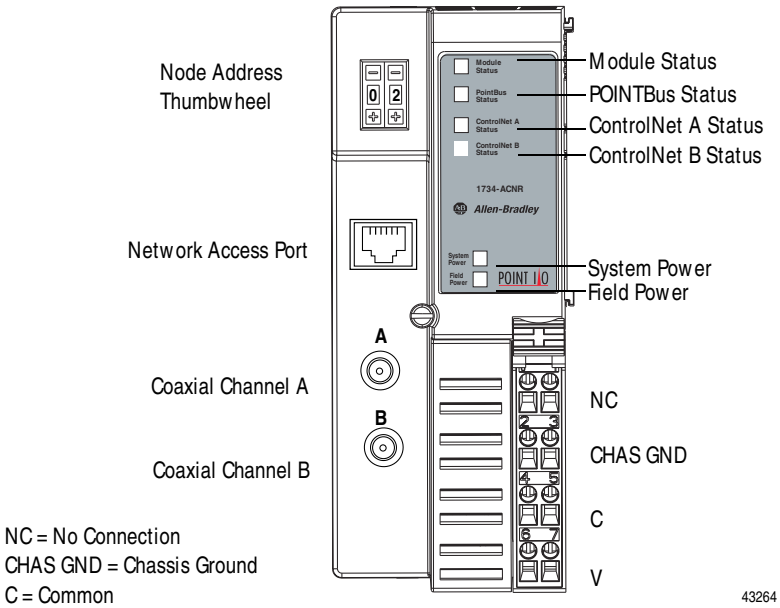
ATTENTION

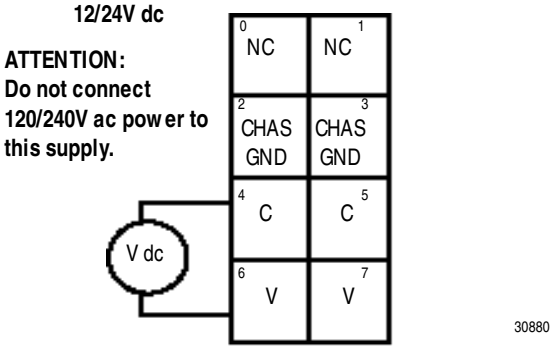
If you connect or disconnect the communications cable with power applied to this module or any device on the network, an electrical arc can occur. This could cause an explosion in hazardous location installations.

ATTENTION

If you connect or disconnect wiring while the field-side power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

See the figure to guide you in wiring the adapter.





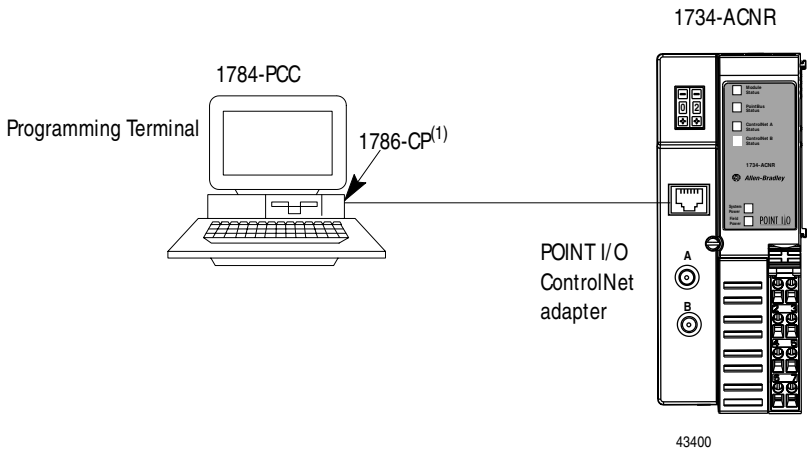
This dc supply will be connected to the internal power bus.

NC = No Connection CHAS GND = Chassis Ground C = Common V = Supply

Connect Programming Terminals to the Network via the NAP

You can connect programming terminals to the ControlNet network by connecting to the network access port (NAP), as shown in the figure.

Using 1784-PCC Communication Card and NAP



(1) The 1786-CP cable can be plugged into any ControlNet product's NAP to provide programming capability on the ControlNet network. A programming terminal connected through this cable is counted as a node and must have a unique address.

ATTENTION

Use the 1786-CP cable when connecting a programming terminal to the network through NAPs. Using a commercially available RJ-style cable could result in possible network failures.

Install the I/O Modules

After installing and wiring the adapter, install the POINT I/O modules used for your application.

For more information on installing and wiring the multiple POINT I/O modules, see the:

- installation instructions for each catalog number
- POINT I/O digital and analog modules user manual in publication 1734-UM001
- the list of publications in the Preface as a guide

IMPORTANT Do not leave any empty slots when installing a POINT I/O system with the 1734-ACNR adapter.

Replace an Adapter

To replace an adapter in an existing system, proceed as follows.

ATTENTION

You must use Series C POINT I/O modules with the 1734-ACNR module. Series A and B POINT I/O modules will not work with the 1734-ACNR adapter.

ATTENTION

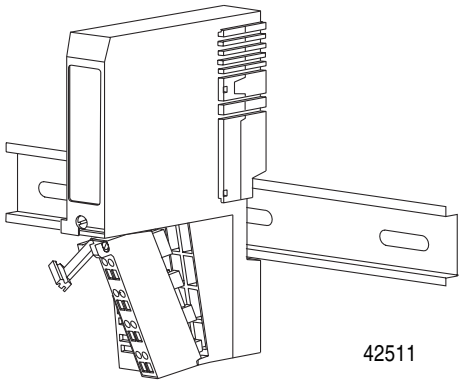
When you insert or remove the module while backplane power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations.

Be sure that power is removed or the area is nonhazardous before proceeding. Repeated electrical arcing causes excessive wear to contacts on both the module and its mating connector. Worn contacts may create electrical resistance that can affect module operation.

1. Remove the existing adapter from the DIN rail as follows.

A. Disconnect the ControlNet cable from the adapter.

B. Pull up on the RTB removal handle to remove the terminal block.



C. Remove the adjacent module from its base.

D. Use a small-bladed screwdriver to rotate the DIN rail locking screw to a vertical position.

This releases the locking mechanism.

E. Lift straight up to remove.

2. Remove the safety end cap on the replacement adapter by sliding it up.

This exposes the backplane and power connections.

3. Position the replacement adapter vertically above the DIN rail.

Make certain the DIN rail lock is in the horizontal position.

4. Slide the adapter down, allowing the interlocking side pieces to engage the adjacent module.

5. Press firmly to seat the adapter on the DIN rail.

The adapter locking mechanism snaps into place.

6. Set the node address on the node address thumbwheel.

7. Insert the RTB starting with the end opposite the handle into the base unit.

This end has a curved section that engages with the wiring base.

8. Reinsert the terminal block by rotating the terminal block into the wiring base until it locks itself into place.

9. Replace the adjacent module in its base.

10. Use a tap to connect the ControlNet cable to the adapter.

    You must use a tap to connect the adapter to the ControlNet cable. Do not directly connect the adapter to the coax cable. Without the ControlNet tap, the wiring violates the ControlNet specification, inducing electrical characteristics such as impedance and noise that cause the ControlNet network to fail.

Plan to Use Your Adapter

Chapter Objectives

This chapter explains how the adapter operates on a ControlNet network and provides information to assist in configuring your system. This chapter contains the following information.

- Overview of adapter operation
  - I/O connections
  - Rack connections
  - Direct connections
  - Explicit messaging communications
  - Software requirements
- Understanding ControlNet I/O
  - Scheduled data-transfer connections on a ControlNet network

Overview of Adapter Operation

Connections are established between a scanner and an adapter to exchange input and output data on the network. Status information is transferred along with the I/O data.

I/O Connections

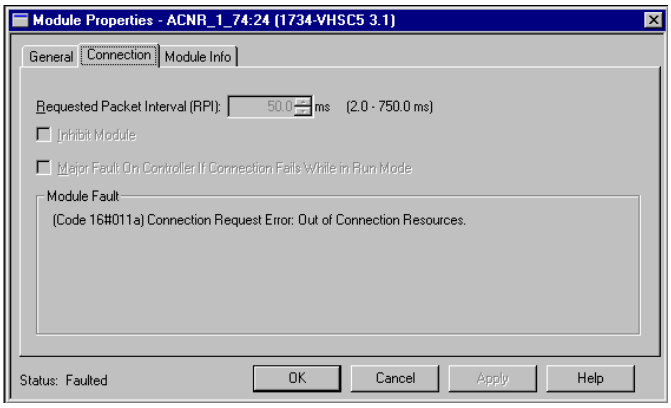
The adapter supports 25 direct and 5 rack I/O connections to the POINT I/O modules. From a single 1734-ACNR adapter, multiple controllers can establish I/O connections, up to a maximum of 5 rack I/O connections per adapter. You must use direct connection with analog and specialty I/O modules.

Make multiple rack connections to permit multiple controllers to connect to I/O over a single 1734-ACNR adapter.

The number of connections that can actually be supported on a network depends on the following.

- ControlNet parameters (NUT, RPI, API)
- POINT I/O configuration by itself (number and types of modules)
- Type of connection to these modules (direct connection, rack connection)

When the 1734-ACNR adapter cannot support any more connections, it does not open the connection and issues the **error 0x11a**. RSLogix5000 reports the following error:



For example, if the NUT = 5 ms and the RPI = 10 ms, the adapter can support:

- one rack connection with up to 39 discrete I/O modules, or
- 16 direct connections to analog or specialty modules, or
- one rack connection (15 discrete I/O modules) plus 10 direct connections to analog modules

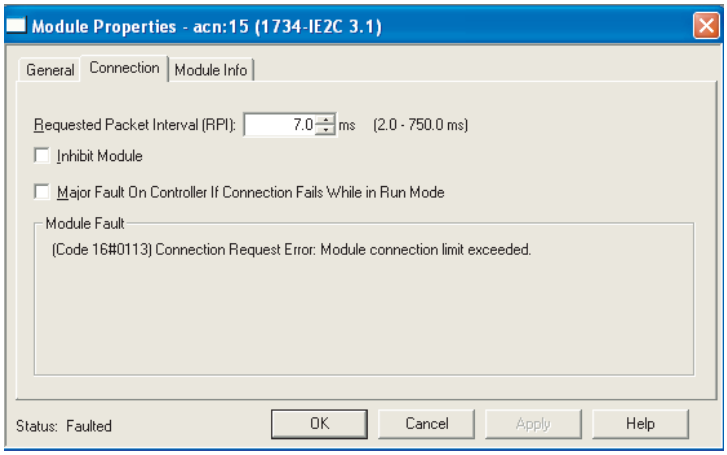
To avoid overloading the 1734-ACNR adapter and to avoid this error, we recommend that the RPI be no less than 10 milliseconds for rack connections and 50 milliseconds for direct connections. If you use more than 35 digital I/O modules with a rack connection, use RPI = 20 milliseconds.

For additional information, refer to the URLs:

- www.ab.com/io/
- support.rockwellautomation.com/(select knowledgebase)

Connection Limit Exceeded Error

The connection limit exceeded error (0x0113) on the **Module Properties** dialog is shown below.



When the 1734-ACNR connection limit is exceeded, you will get an 0x0113 error. The 1734-ACNR connection limit is 600 bytes.

This condition can exist when the modules connected to the 1734-ACNR adapter overflow the adapter's transmit buffer. This condition is rare with most POINT I/O modules.

A combination of 25 analog I/O and 38 digital I/O with direct and rack connections, respectively, should not result in this error. However, the 1734-232ASC Serial Interface ASCII module can transmit up to 134 bytes.

Five of these modules configured to a maximum data size will overflow the 1734-ACNR transmit buffer.

Proper planning should prevent this error from occurring. Notice that the 1734-232ASC module default configuration is 80 bytes.

Rack Connections

A rack connection supports a group of modules. The 1734-ACNR supports five instances of the rack object that provide the ability to communicate I/O data from all discrete I/O modules in the 1734 bus via one connection pair. The rack object contains both I/O and diagnostic status.

The rack connection specifies the same fixed size of I/O data for all modules, starting at slot 0 (adapter).

IMPORTANT Slot 0 is reserved for the adapter. The adapter is not a member in the rack.

Multiple rack connections are limited to a maximum of 5 rack connections. Rack connections are defined using RSLogix5000 software and can be of either of the following types:

- rack optimization, or
- listen only optimization

Assume you have set up a system that contains 8 discrete I/O modules interfaced to a 1734-ACNR adapter. If you use direct connections to transfer data to each of these I/O modules, you need 8 connections to transfer all of the data, one to each of the 8 I/O modules. If you use a rack-optimized connection to transfer the data, you need only a single connection - the connection to the 1734-ACNR 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 and specialty I/O require direct connections.
- Rack optimized connections can contain I/O data and status information only.
- All data is sent at the same time at the API rate of the adapter.

Direct Connections

The 1734-ACNR adapter supports up to 25 direct connections to POINT I/O modules. Multiple controllers can connect to the I/O modules.

- The controller that is the first one in will win configuration rights and the ownership of the outputs.
- After an owner has established the connection, any other controller can operate in a listen-only mode to a POINT output module. Outputs can support only one direct connection and can support multiple listen-only connections.
- An input module is configured by a controller that establishes a connection as an owner. This configuring controller is the first controller to establish an owner connection.

  Once an input module has been configured (and owned by a controller), other controllers may establish owner connections to that module also. That way additional owners can continue to receive multicast data if the original owner controller breaks its connection to the module. All other additional owners **must** have the identical configuration data and identical communication format that the original owner controller used, otherwise the connection attempt is rejected.

Explicit Messaging Communication

The adapter supports unconnected (CIP generic) messaging to objects within the adapter and the POINT I/O modules.

The 1734-ACNR adapter supports the following objects:

Object	Number of Instances
Device Object	1
Message Router Object	1
Connection Manager Object	1
Unconnected Message Manager Object	1
ControlNet Object	1
Rack Object	5
NVS Object	Flash upgrade

Unconnected messaging lets tools or controllers interface with the CIP objects supported by the POINT I/O modules. The adapter lets controllers, scanners, and software applications address objects for POINT I/O modules on the POINTBus using unconnected messaging. This requires the adapter to appear as a bridge to these devices. The POINT I/O modules are directly addressed. The 1734-ACNR adapter is a proxy server for unconnected messaging.

Software and Hardware Requirements

This manual illustrates the rules and dialog captures for ControlLogix only because it is the most complex system.

The software and hardware requirements to successfully configure the 1734-ACNR adapter for a ControlLogix system are:

- RSLinx version 2.31.00 or greater
- ControlLogix processor, firmware revision 11.1 or greater
- RSLogix5000 version 11.10 or greater
- RSNetWorx for ControlNet version 3.23.00 or greater
- ControlNet bridge 1756-CNBR/D 5.27 or greater
- Series C or greater POINT I/O modules

Understand ControlNet I/O

The ControlNet system is designed to:

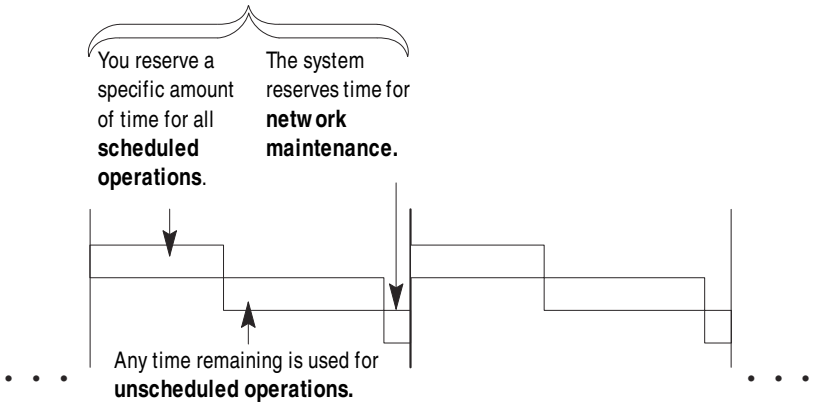
- provide high-speed, repeatable, deterministic I/O transmission
- allow control and message information to co-exist on the same physical media
- make sure that I/O data transfers are not affected by
  - programming-terminal message activity
  - inter-processor message activity on the network

Scheduled Data-Transfer Connections on a ControlNet Network

Scheduled data transfer on a ControlNet processor:

- is continuous
- is asynchronous to the ladder-logic program scan
- occurs at the actual packet interval

The ControlNet system places your scheduled transfers in the first part of each network update interval. Time is automatically reserved for network maintenance. Unscheduled transfers are performed during the time remaining in the interval.



IMPORTANT The ControlNet network reserved time for at least one maximum-sized unscheduled transfer per update interval. Depending on how much time there is for unscheduled messaging, every node may not have a chance to send unscheduled data every update interval.

Before You Begin

To effectively use your adapter, note the following considerations.

Understand Messaging

Class 3 (Explicit Message) requests through the 1734-ACNR adapter to a specific POINT I/O module may not always receive a response from the I/O module. In the case where the I/O module does not reply to the request, the adapter responds with an error code indicating a time-out.

Establish I/O Connections

When you power up a POINT I/O system and establish I/O connections, the outputs transition to the Idle state, applying Idle state data before going to RUN mode. This occurs even when the controller making the connection is already in RUN mode.

Configure Autobaud

The adapter cannot reconfigure an I/O module that you previously configured to operate at a fixed baud rate. When you reuse a POINT I/O module from another POINT I/O system, configure the module to autobaud before using it with the 1734-ACNR adapter.

Understand Adapter Data Capability

The 1734-ACNR adapter provides high-speed transfer of time-critical data between controllers and I/O devices. It manages data transfers between controllers on the ControlNet network and POINT I/O modules plugged into the POINTBus backplane.

The ControlNet network is a communication architecture that allows the exchange of messages between ControlNet products compliant with the ControlNet International specification. The 1734-ACNR adapter features include a variety of control system solutions, local communication network access through the network access port (NAP) and redundant media. It requires Series C POINT I/O modules or later.

The 1734-ACNR adapter requires a typical 24V dc power supply with a maximum of 10.2 W of power. It provides a maximum backplane current of 1.0 A @ 5V dc.

To extend backplane current beyond 1.0 A use a 1734-EP24DC backplane extension power supply. The 1734-EP24DC can supply up to an additional 1.3 A of backplane current. Use multiple 1734-EP24DC power supplies to reach the maximum limit of 63 POINT I/O modules, if 25 or less of these modules are analog or specialty modules.

The adapter supports 25 direct and 5 rack I/O connections to the POINT I/O modules. From a single 1734-ACNR adapter, multiple controllers establish I/O connections, up to a maximum of 5 rack I/O connections per adapter.

You must use direct connections with analog and specialty modules. Multiple rack connections permit multiple controllers to connect to I/O over a single 1734-ACNR adapter.

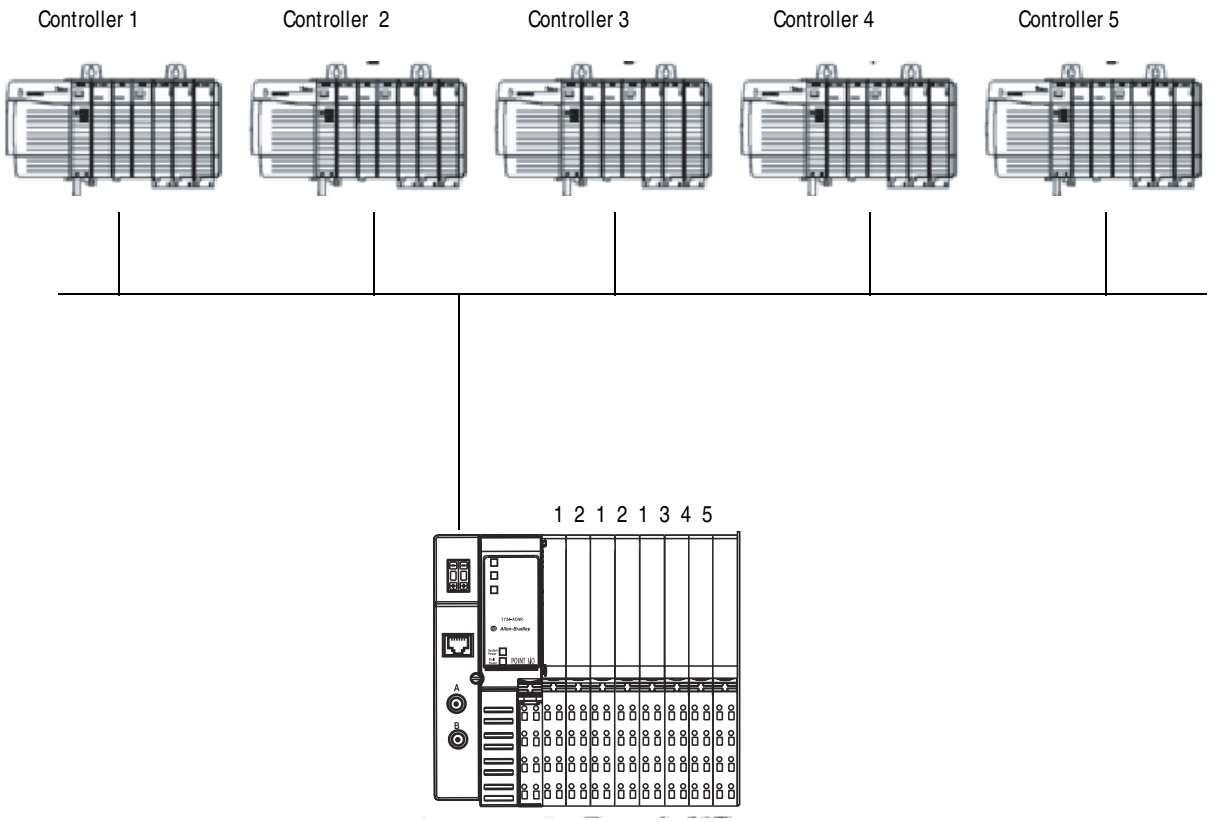
The number of connections that can actually be supported on a network depends on the following.

- ControlNet parameters (NUT, RPI, API)

- POINT I/O configuration by itself (number and types of modules)
- Type of connection to these modules (direct connection, rack connection)

The following example shows a single POINT I/O ControlNet adapter with 5 connections and 8 I/O modules. The POINT I/O modules are monitored by the 5 controllers on the ControlNet network. The POINT I/O modules in the slots are controlled by the controller shown in the table.

These Controllers	Control These Slots
1	1, 3, 5
2	2, 4
3	6
4	7
5	8



1734-ACNR adapter supports 5 rack I/O connections 44017

When using I/O modules with large amounts of data, be aware of the 1734-ACNR adapter data capability. The 1734-ACNR adapter has 586 bytes of memory available for scheduled transmit data. The amount of data used by an individual connection must also include a small amount of overhead - 10 bytes per connection. Use the following formula to track the amount of available scheduled transmit data.

Available Memory =
586 - [(Number of connections * 10) + Sum of all connection sizes]

In the following examples, the system uses a 1734-ACNR adapter with five 1734-232ASC modules.

	Application Data Size (Number of Bytes)	Memory Required
1734-232ASC - 1	100	110
1734-232ASC - 2	88	98
1734-232ASC - 3	96	106
1734-232ASC - 4	96	106
1734-232ASC - 5	92	102
Total Bytes Used	472	522

In this example, you could add a sixth module if it uses less than 54 bytes of application data with 64 bytes of memory left.
64 = 586 - [(5 * 10) +472]

Configure the Adapter

Chapter Objectives

This chapter guides you through the steps required to configure your 1734 POINT I/O ControlNet adapter using ControlLogix. The chapter contains procedures on how to:

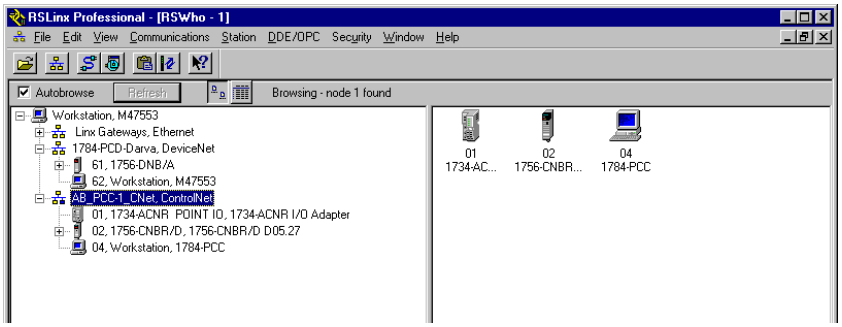
- add modules to the I/O configuration
  - select a controller
  - select a communication module
  - select an adapter
- add analog, digital, specialty, or other modules
- download the program to the controller
- configure the 1734-ACNR adapter
- schedule I/O module connections
- access the module data via the 1734-ACNR adapter
- change configuration data
- respond in the case of an overloaded 1734-ACNR adapter

Add Modules to the I/O Configuration

You must add modules to the I/O configuration before you begin to configure them.

Select a Controller

1. Start RSLinx software.



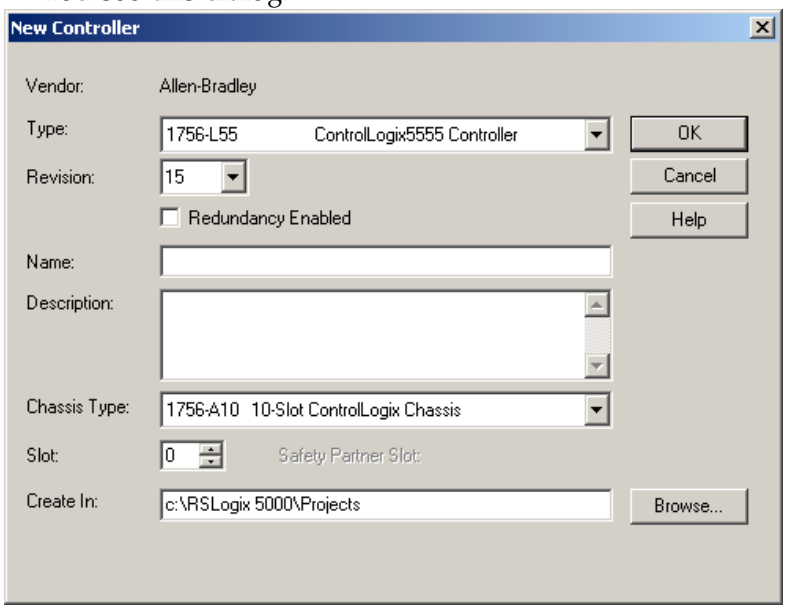
You need the 1756-CNBR Series D ControlNet bridge to access the 1734-ACNR adapter from the ControlLogix network.

The 1784-PCC module is the Personal Computer ControlNet network interface card used to talk to the networks.

2. Start RSLogix5000 Enterprise series software, version 15 or greater.

3. From the File menu, choose New.

   You see this dialog.



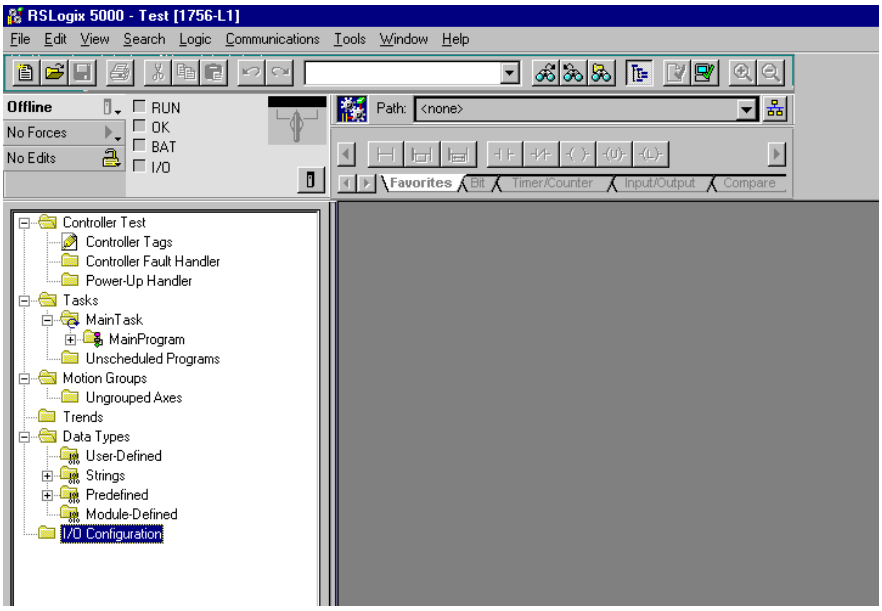
4. Complete the following entries.
   - Type
   - Name
   - Description (optional)
   - Chassis Type
   - Slot
   - Create In

5. Verify that the revision of the controller is compatible with the POINT I/O products.

   The controller's revision should be 15 or higher.

6. Click OK to close the dialog.

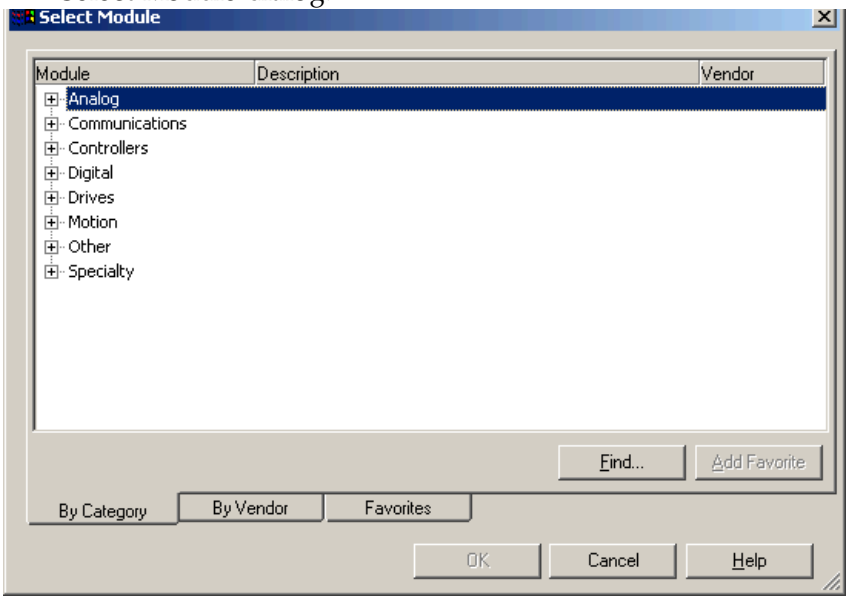
   You see this dialog.


RSLogix 5000 - Test [1756-L1]
File Edit View Search Logic Communications Tools Window Help
Offline
No Forces
No Edits
RUN
OK
BAT
I/O
Path: <none>
Favorites
Bit
Timer/Counter
Input/Output
Compare
Controller Test
Controller Tags
Controller Fault Handler
Power-Up Handler
Tasks
MainTask
MainProgram
Unscheduled Programs
Motion Groups
Ungrouped Axes
Trends
Data Types
User-Defined
Strings
Predefined
Module-Defined
I/O Configuration

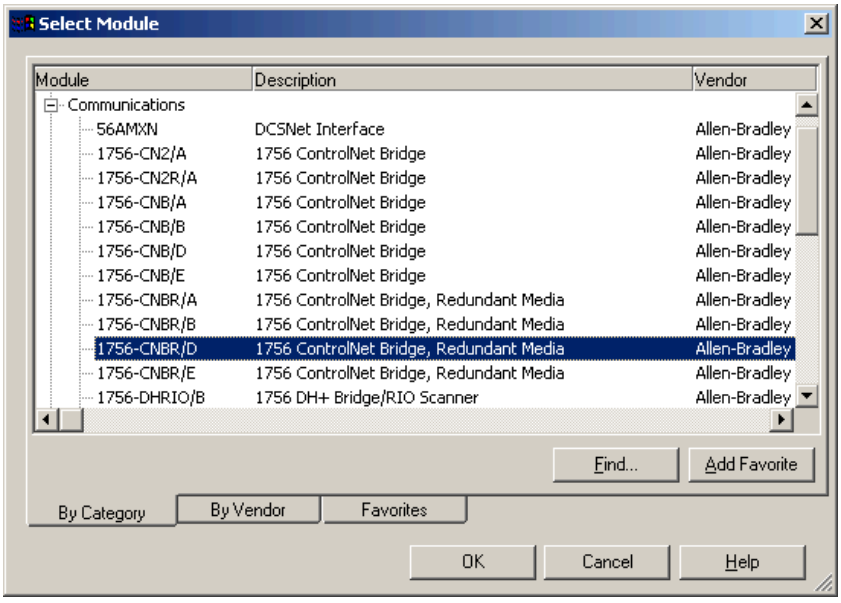
Select a Communication Module

1. Click on I/O Configuration on the left side of the dialog to highlight it.

2. Right-click on I/O Configuration and choose New Module to see this Select Module dialog.

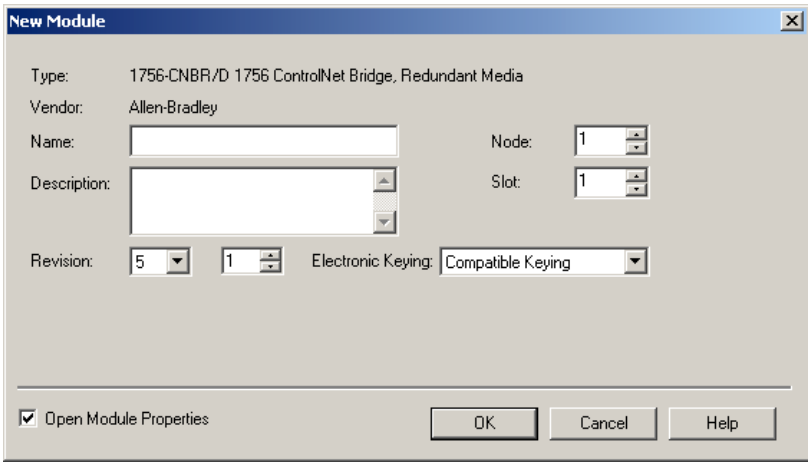


3. Right-click on + next to Communications to expand, as in the following dialog.



4. Choose the 1756-CNBR/D ControlNet Bridge.

5. Click OK to see the New Module dialog.

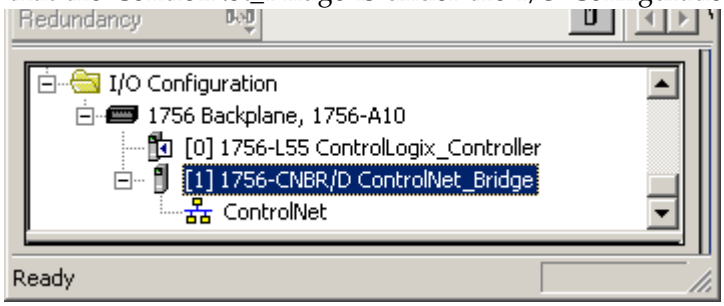


6. Complete the following entries.
   - Name
   - Node
   - Description (optional)
   - Slot
   - Open Module Properties

7. Click the Open Module Properties box to see the Module Properties dialog when you click OK.

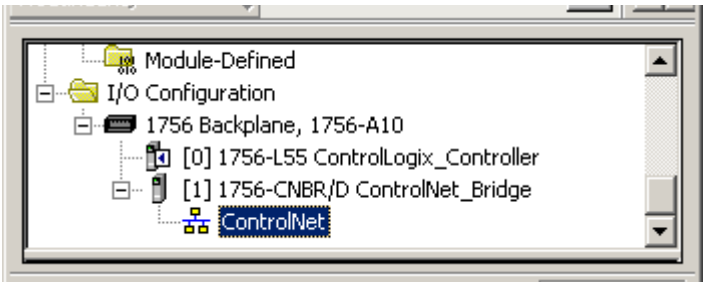
8. Click OK.

Notice that the ControlNet_Bridge is under the I/O Configuration.



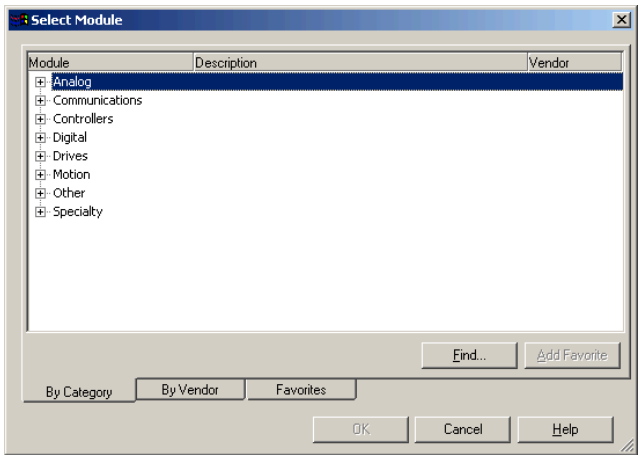
Select the 1734-ACNR Adapter

1. From the following dialog, right-click on ControlNet and choose New Module.



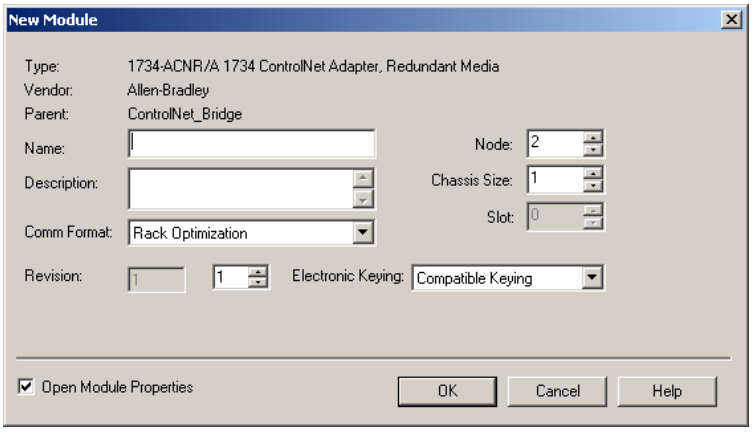
You see the Select Module dialog.

2. Right-click the + next to Communications to see the following dialog.



3. Choose 1734-ACNR/A.

4. Click OK to see the New Module dialog.



5. Make the following entries.

- Name
- Node
- Description (optional)

6. Click the Open Module Properties box to see the Module Properties dialog when you click OK.

7. Enter the chassis size using the following guidelines.

   The chassis size equals 1 for the adapter + the number of POINT I/O modules installed (physically present on the POINT I/O backplane),

IMPORTANT The chassis size is the total number of modules installed on the POINTBus backplane. The chassis size includes the POINT I/O adapter.
For example, for the 1734-ACNR adapter and 3 I/O modules, enter a chassis size of 4.

8. Enter Comm Format. Comm Format choices are as follows.
   - None - the adapter makes a direct connection to each and every module - discrete, analog, and specialty.
   - Rack Optimization - any of the discrete module's data is grouped together to form a rack optimization. This does not include analog or specialty I/O modules.
   - Listen Only - Rack Optimization - read or verify data only, but does not control the modules (when you have multiple processors - one processor is used to control and the other processors are used to monitor).

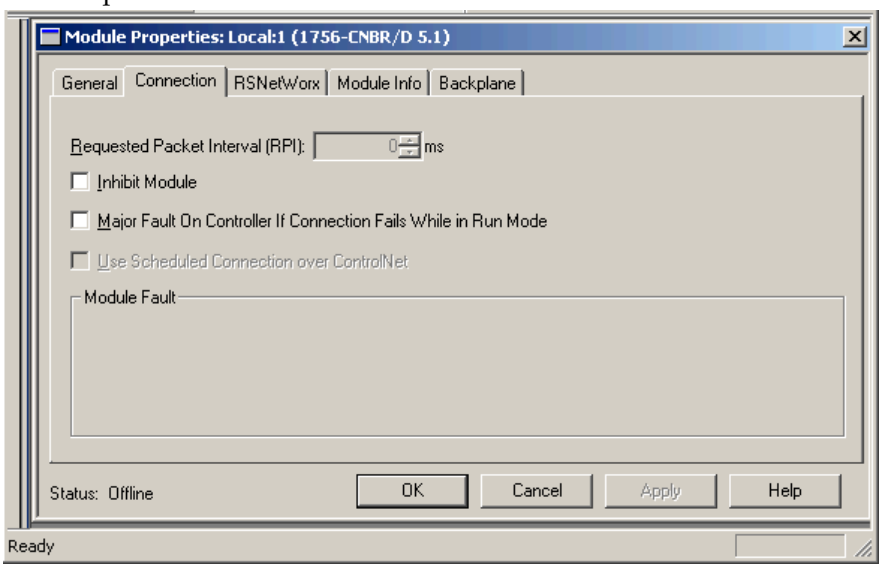
9. Click OK.

10. Enter the Requested Packet Interval (RPI) to set how quickly data is exchanged from the adapter.

IMPORTANT To avoid overloading the adapter, we recommend that the RPI be no less than 10 ms for rack connections and 50 ms for direct connections. If you have more than 35 digital I/O modules with a rack connection, use RPI = 20 ms.

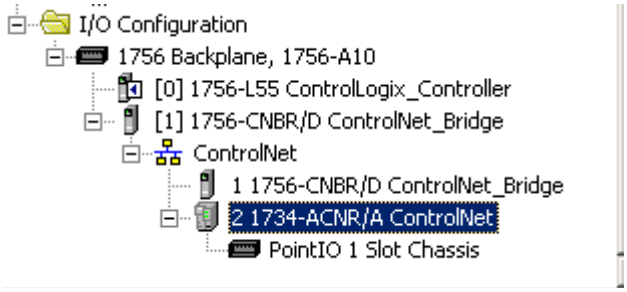
For information on setting the RPI, refer to the publication for the individual 1734 I/O module.

To identify individual 1734 I/O module publications, use the list of publications in the Preface of this manual.



11. Click OK.

Notice that the adapter appears under I/O Configuration.



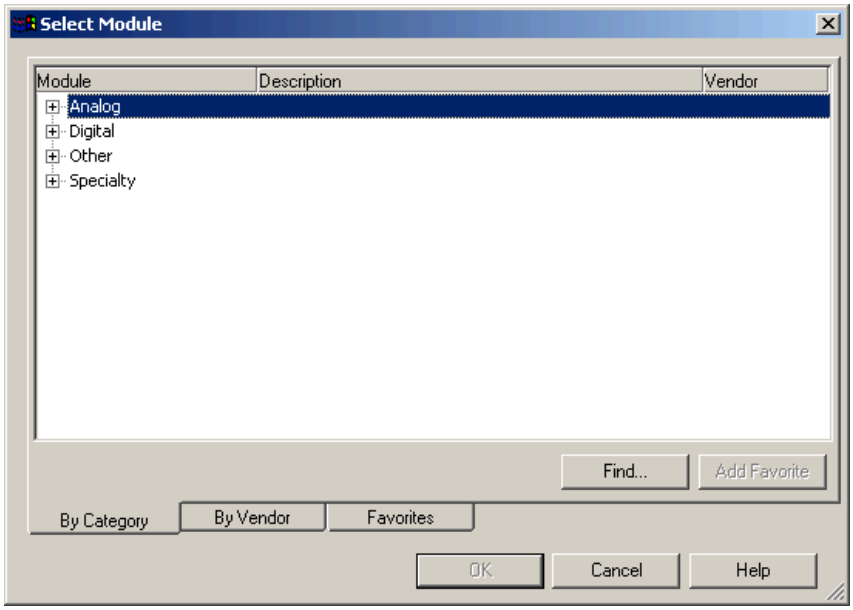
Add Analog, Digital, Other, or Specialty Modules

Select Analog, Digital, Other, or Speciality, depending on your module type. In this example, we add a digital module.

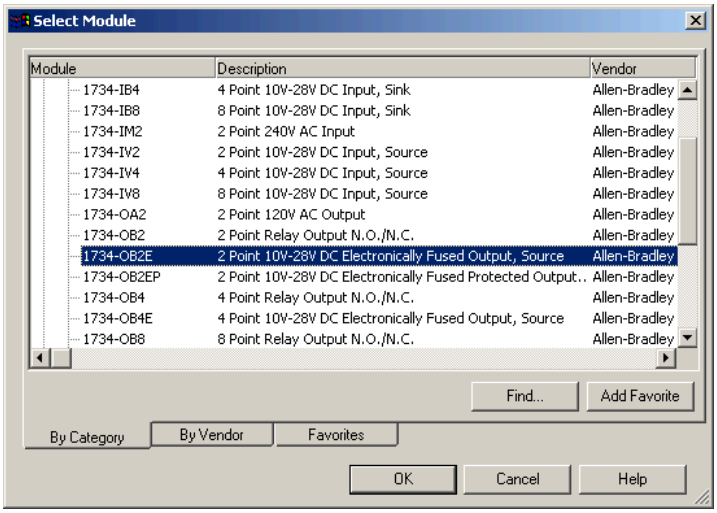
1. Highlight the 1734-ACNR/A adapter under I/O configuration, right-click, and select New Module .

IMPORTANT If you exceed the 1734-ACNR chassis size by trying to add more modules than you configured, the New Module selection is disabled and appears grayed out. You will not be able to add any more POINT I/O modules until you increase the 1734-ACNR chassis size.

You see the following Select Module dialog.

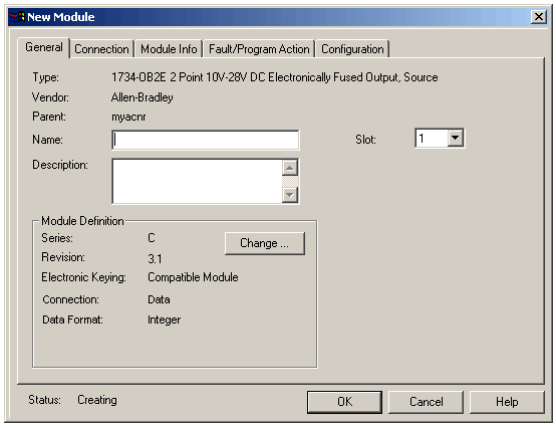


2. Choose + next to Digital to expand the selection, as in this dialog.



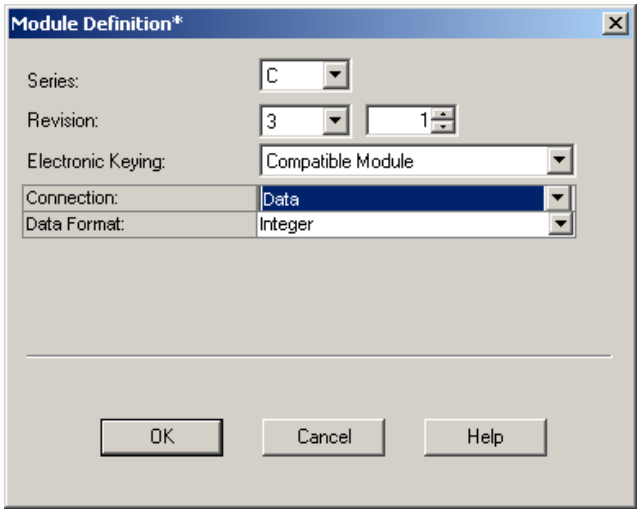
3. Choose 1734-OB2E/C from the list of modules.

4. Click OK to see the New Module dialog.



5. Enter a name (optional), slot number, and description.

6. Click Change to see the Module Definition dialog.



7. Complete the following entries.
   - Series
   - Revision
   - Electronic Keying
     - Exact Match
     - Compatible Module
     - Disable Keying
   - Data Format
   - Connection
     - Data
     - Listen Only
     - Rack Optimization

- Listen-Only - Rack Optimization

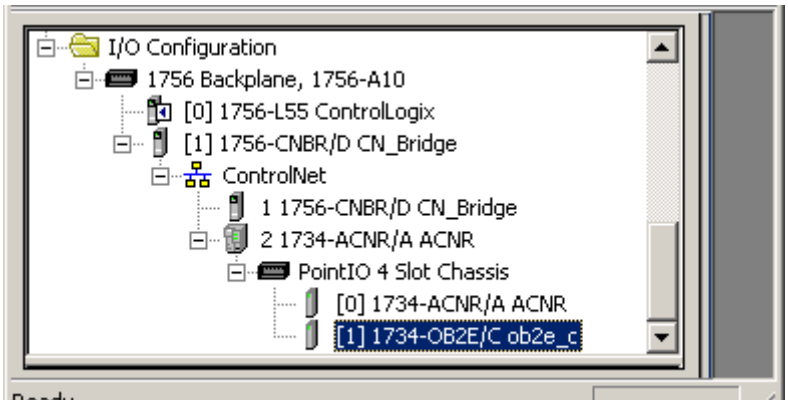
IMPORTANT Use Rack Optimization and Listen-Only Rack Optimization connections only for discrete I/O modules. Analog and speciality modules require direct connection.

For a complete listing of connection types, see:

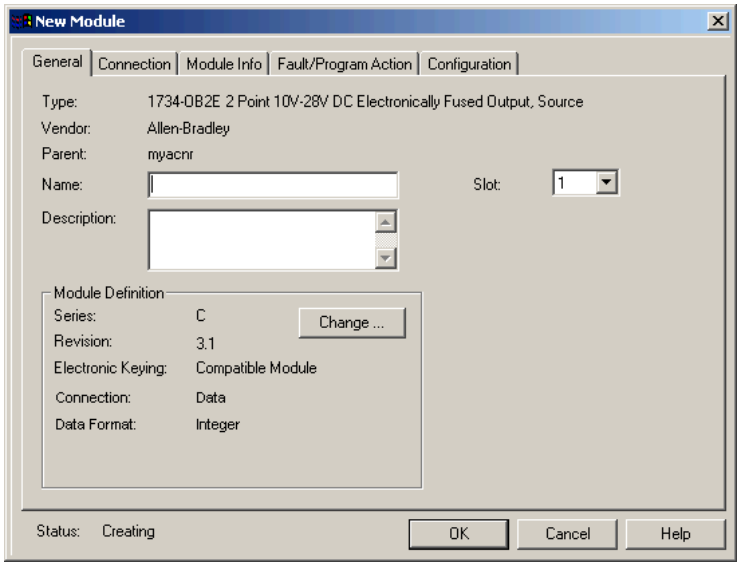
Publication 1734-UM001, POINT I/O Digital and Analog Modules and POINTBus I/O Modules

8. Click OK.

Notice that 1734-OB2E is now under the I/O configuration.



9. Click 1734-OB2E to see the New Module dialog.

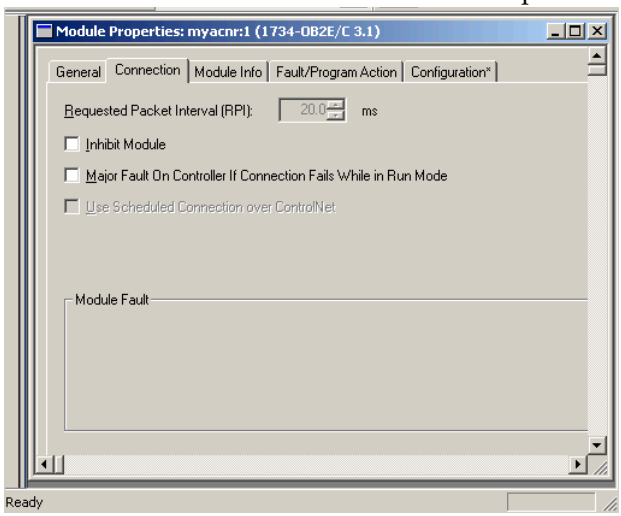


10. Complete entries for the following.

- Connection
- Module Info
- Fault/Program Action
- Configuration

For details on completing entries for Fault/Program Action and Configuration, refer to online help or the user manual for your individual module.

11. Choose Connection to see this Module Properties dialog.



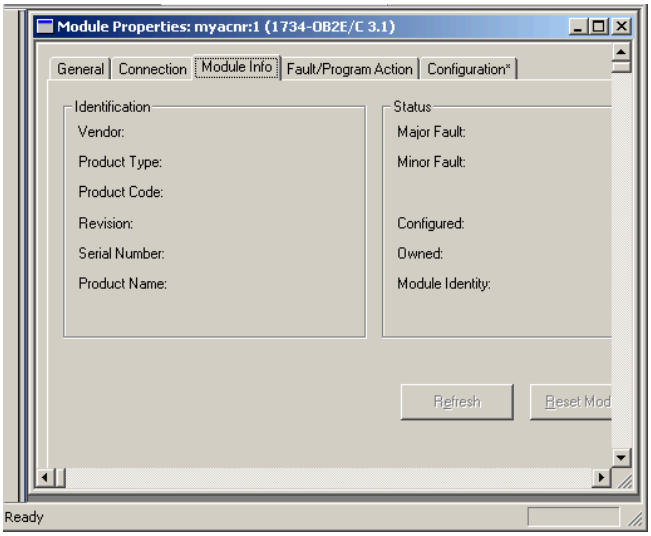
12. Uncheck the following checkboxes, if checked.

- Inhibit Module
- Major Fault On Controller If Connection Fails While in Run Mode

13. Enter RPI for direct connections.
If you are configuring a digital module and chose direct connections, the I/O module RPI is selectable. RPI is not selectable if you chose rack optimizated communication.

Module Type	Default Time
Analog	80 ms
Digital	20 ms
Specialty	80 ms

14. Choose Module Info to see this dialog, which provides identification and status information.



15. Choose the following for module-specific settings.

    Refer to the online help and user manual for the applicable modules for details of how to complete the entries on these dialogs.

    - Fault/Program/Action
    - Configuration

16. Choose File>Save As and enter the name and location of the RSLogix5000 file.

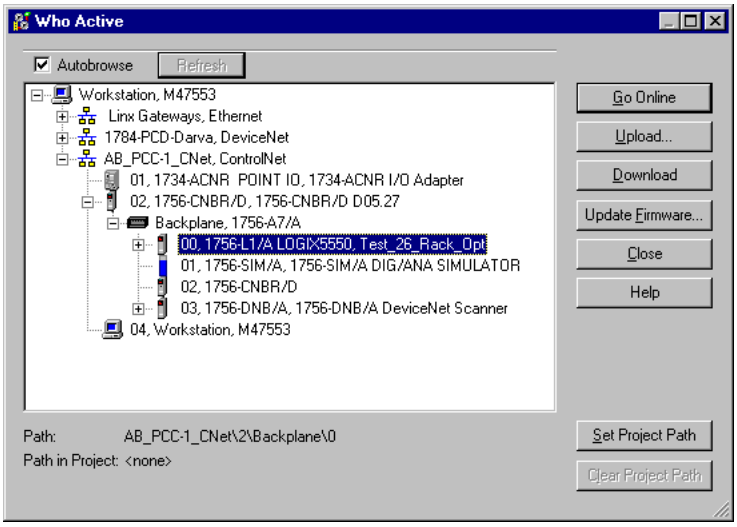
Download the Program to the Controller

Follow this procedure to download the program you just saved to the ControlLogix controller.

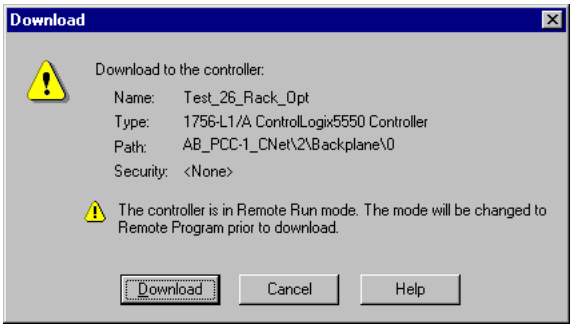
1. From the main menu, choose Communications>Who-Active.

2. Select the processor slot in the chassis.

3. From the Who Active dialog, choose Set Project Path.



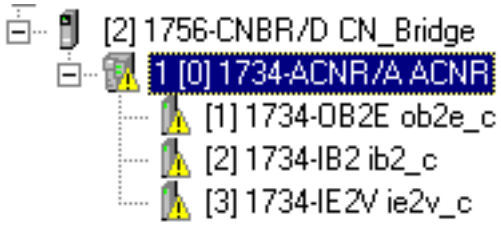
4. From the Who Active dialog, choose Download to see the Download dialog.



5. From the Download dialog, choose Download.

You see this RSLogix 5000 dialog.

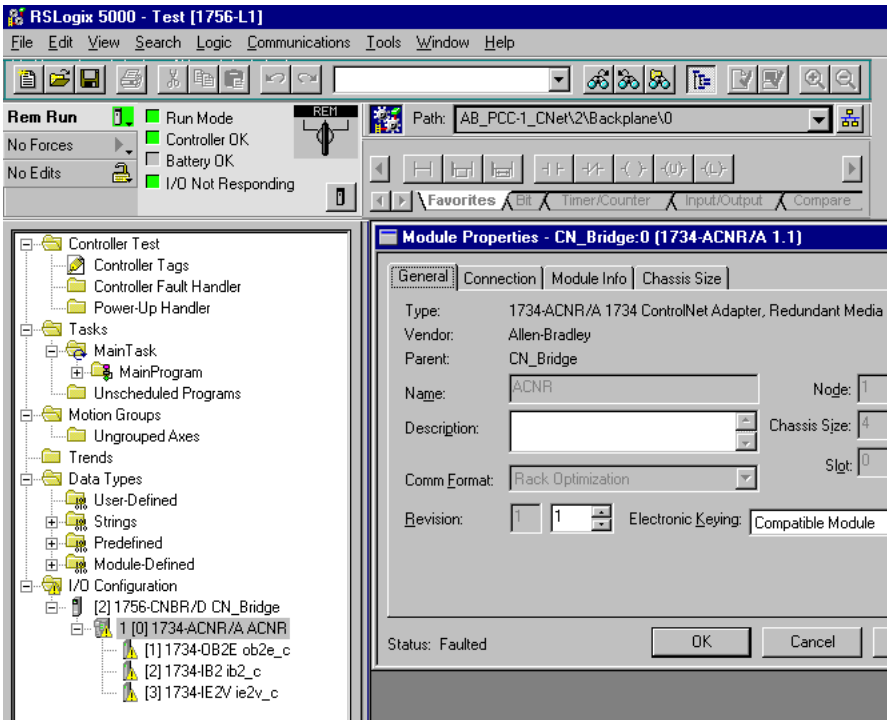
Notice that the 1756-CNBR Bridge is now on line, but the rest of the I/O configuration (adapter and I/O modules) connections are not scheduled (notice the yellow triangles).



Configure the 1734-ACNR Adapter

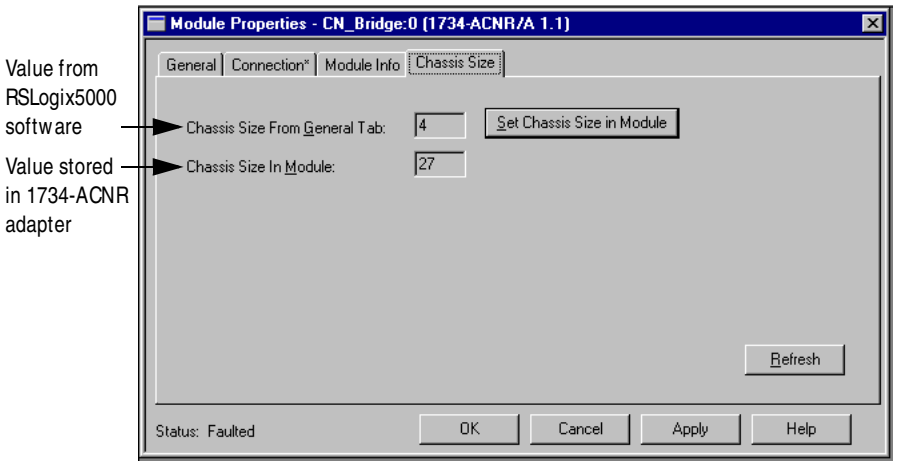
You have now built the I/O tree in RSLogix5000, and the RSLogix5000 software used the chassis size from the 1734-ACNR General Tab. Now you need to download this new chassis size value into the 1734-ACNR adapter hardware. This procedure will synchronize the chassis size value from the RSLogix5000 software into the 1734-ACNR adapter.

1. Highlight the 1734-ACNR adapter, and right-click to choose Properties.



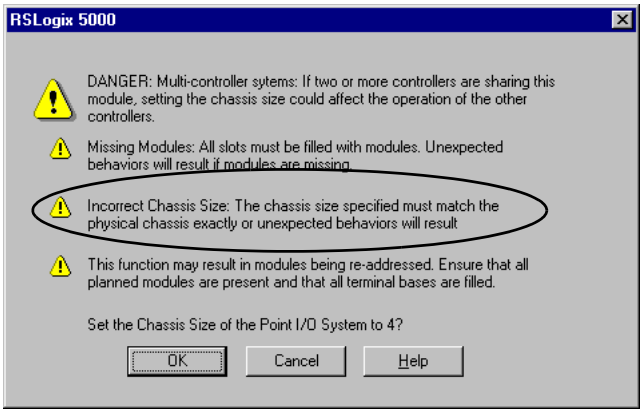
2. Click the Chassis Size tab.

3. Click Set Chassis Size in Module.



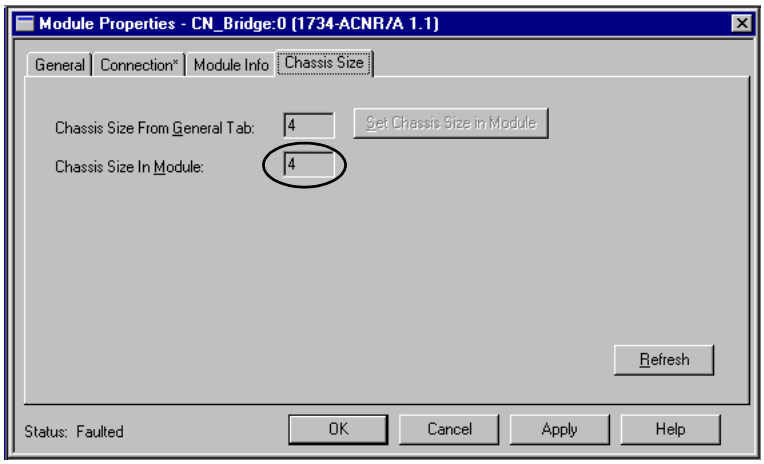
Note that these chassis sizes do not match.

4. Read and acknowledge the warning dialog.



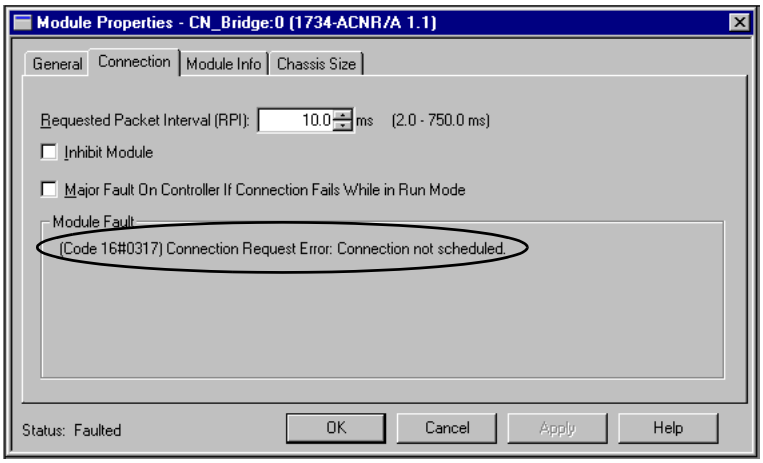
5. Click OK to continue.

Notice the chassis size in the module has been modified to 4.



6. Click Apply to update the value in the chassis size module.

7. Click the Connection tab.



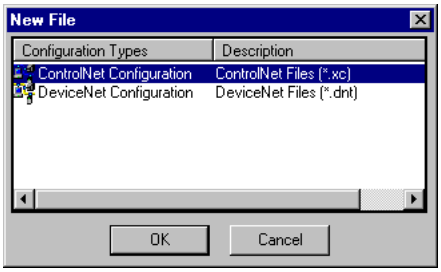
Notice that the connection request error is still present because we haven't scheduled any of the I/O module connections yet. You'll do that through RSNetWorx for ControlNet.

Schedule I/O Module Connections

Use these procedures to schedule I/O module connections.

1. Start RSNetWorx for ControlNet.

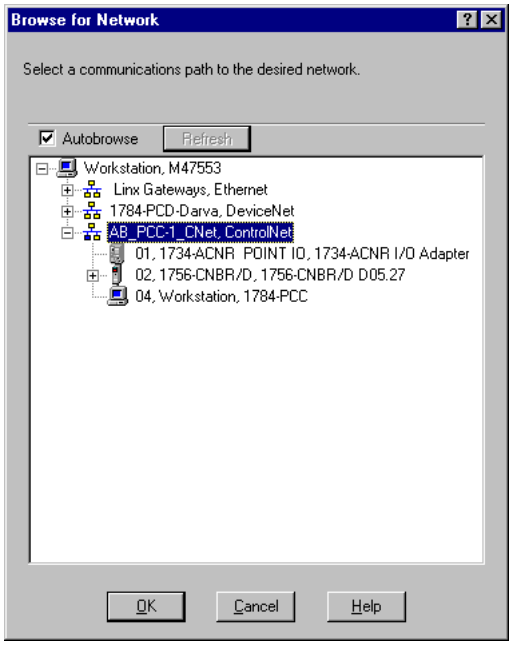
2. From the File menu, choose New.



3. Click OK.

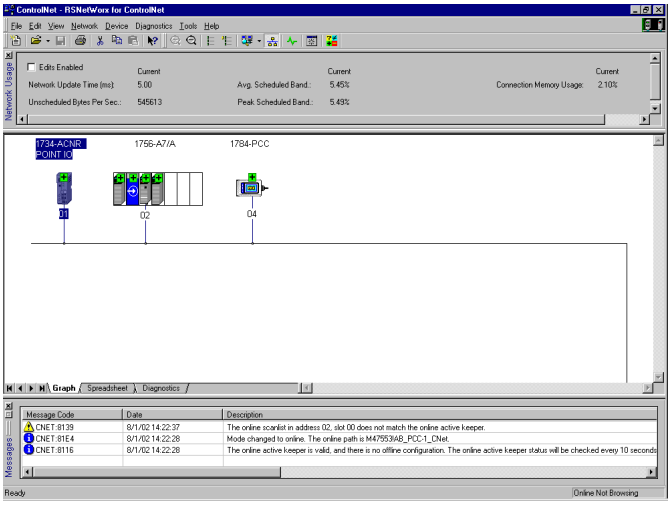
4. Choose Network>Online.

5. Choose the PCC interface card.

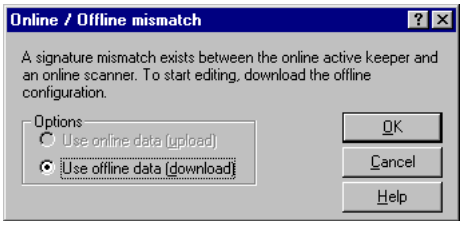


6. Click OK.

When you are online, you'll see the following dialog.



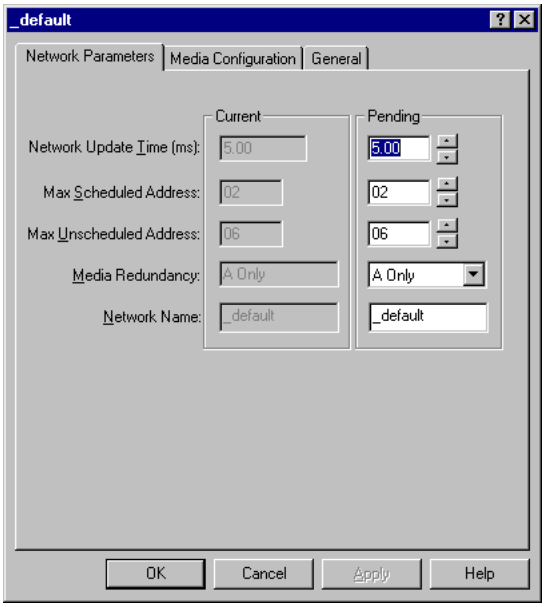
You see the Online/Offline mismatch window.



7. Click OK.

8. Choose Edits Enabled in the top left of the dialog.

9. From the main menu, choose Network>Properties. The _default dialog appears.



Specify the following information:

10. Specify a value for Network Update Time - the repetitive time interval in which data can be sent on the link.

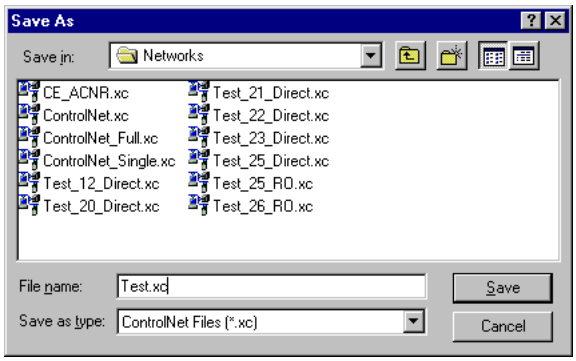
11. Specify a value for Max Scheduled Address - the highest number node that has scheduled connections to it.

12. Specify a value for Max Unscheduled Address - the node with the highest MAC ID that can use unscheduled time on the link.

    These values are set to 99 by default. Chhange these values to what is installed in your system. This saves you time because the controller will not have to search for all of the node addresses.

13. Specify a value for Media Redundancy on channel A, B or A and B.

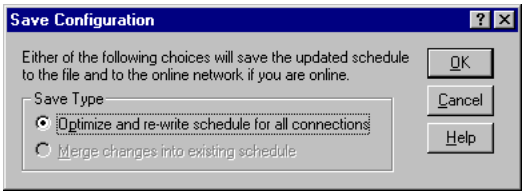
14. Click OK to see the Save As dialog.



15. Click Save to see the Save As dialog.

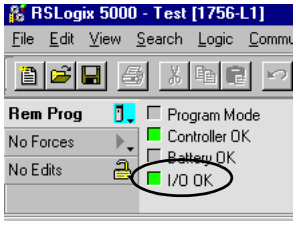
16. From the Save As dialog, enter a name and location for the file, and click Save.

    You see the Save Configuration dialog.

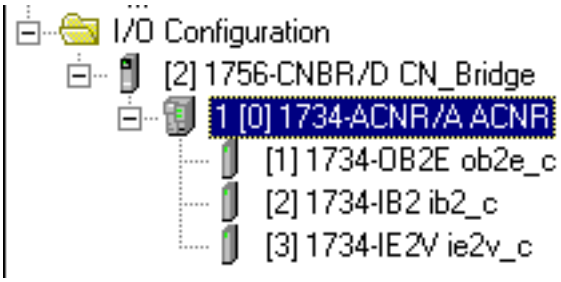


17. Click OK.

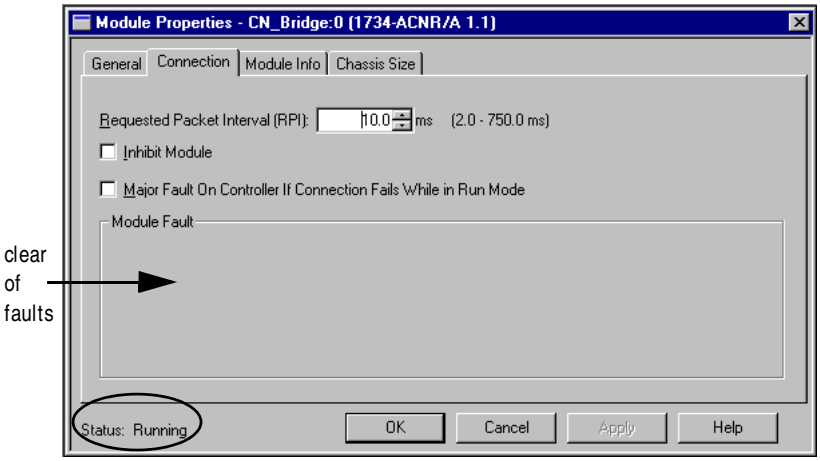
18. Notice the I/O OK is solid green.



19. Notice that all of the yellow warning triangles are gone in the I/O Configuration.



20. Notice that the Status in the 1734-ACNR Module Properties dialog is Running with no faults.



Access Module Data via the 1734-ACNR Adapter

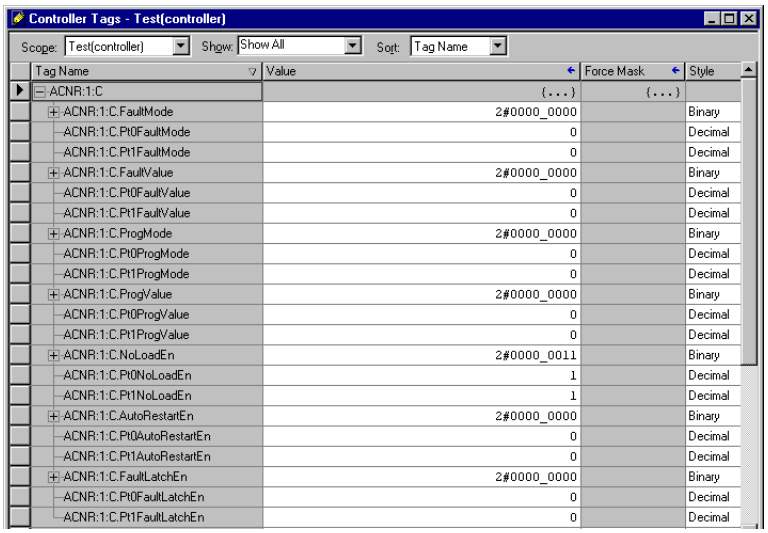
Use the following information to use the 1734 POINT I/O ControlNet adapter module data in the ladder logic program.

- ACNR = the name you gave to your ControlNet adapter
- # = slot number of POINT I/O module
- C = configuration, I = input, O = output

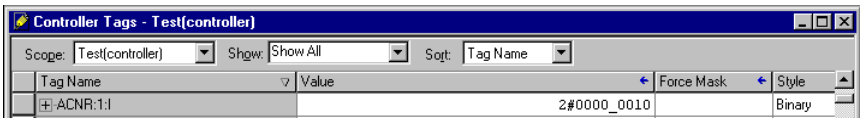
When there is no slot number, that is the rack optimized data.

Here are some typical sample comfiguration data examples.

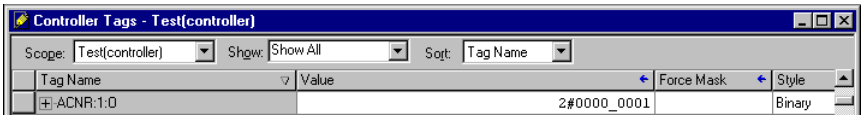
- ACNR:1:C (1734-OB2E module) configuration data



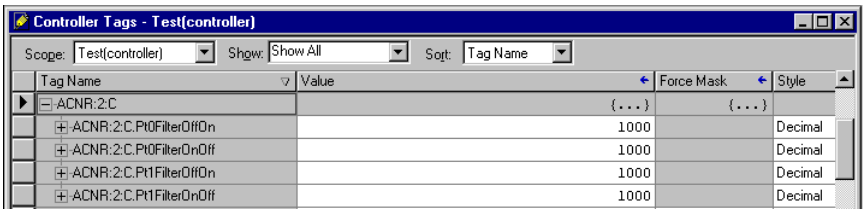
- ACNR:1:I (1734-OB2E module) (fault status) input data (open wire and overcurrent)



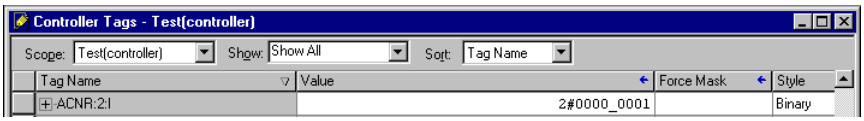
- ACNR:1:O (1734-OB2E module) output data



- ACNR:2:C (1734-IB2 module) configuration data

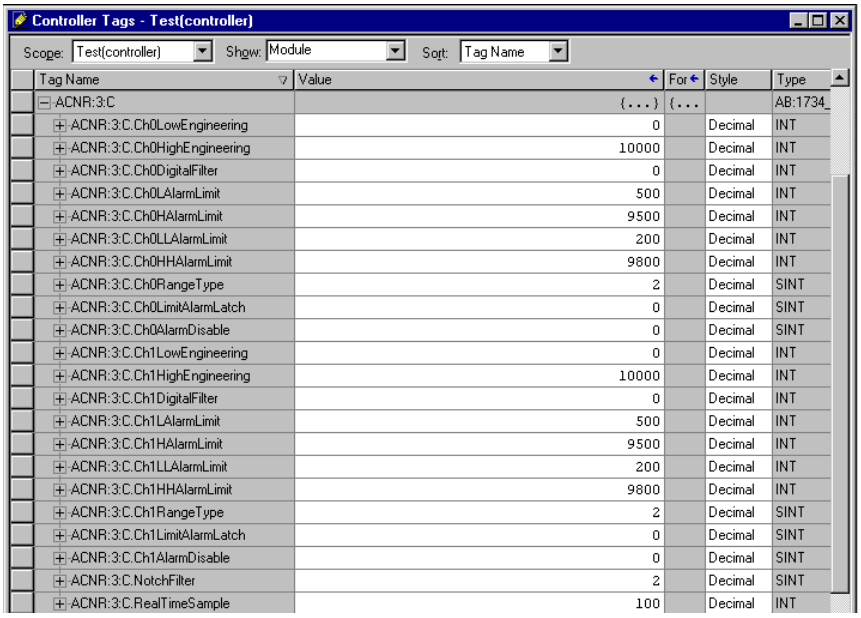


- ACNR:2:I (1734-IB2 module) input data

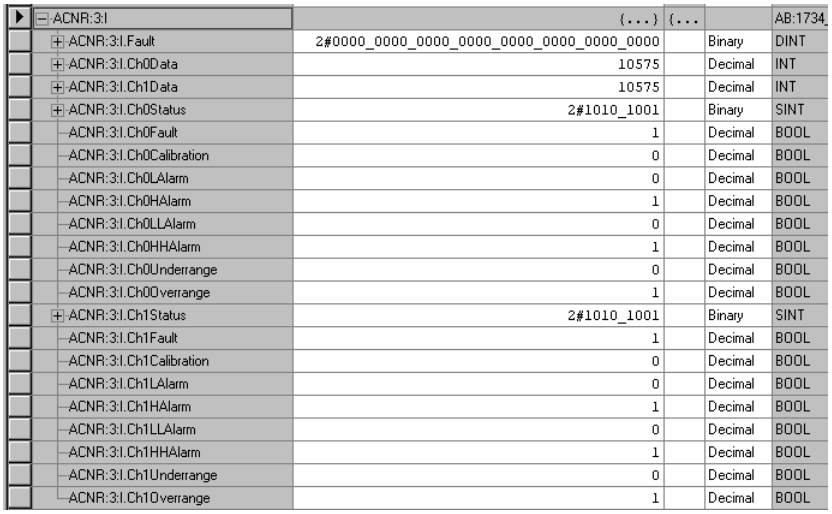


TIP It is also possible to send configurations via CIP messages.

- ACNR:3:C (1734-IE2V module) configuration data

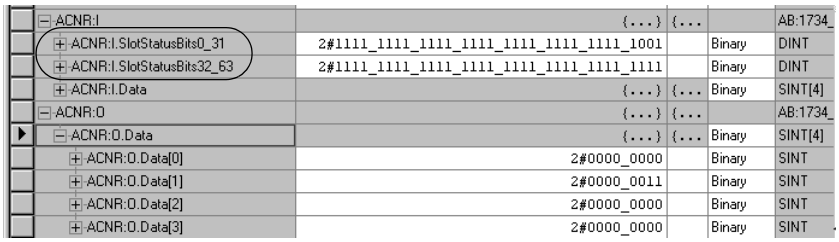


- ACNR:3:I (1734-IE2V module) input data



ACNR:3:I	{...}	{...		AB:1734_
ACNR:3:I.Fault	2#0000_0000_0000_0000_0000_0000_0000_0000		Binary	DINT
ACNR:3:I.Ch0Data	10575		Decimal	INT
ACNR:3:I.Ch1Data	10575		Decimal	INT
ACNR:3:I.Ch0Status	2#1010_1001		Binary	SINT
ACNR:3:I.Ch0Fault	1		Decimal	BOOL
ACNR:3:I.Ch0Calibration	0		Decimal	BOOL
ACNR:3:I.Ch0LAlarm	0		Decimal	BOOL
ACNR:3:I.Ch0HAlarm	1		Decimal	BOOL
ACNR:3:I.Ch0LLAlarm	0		Decimal	BOOL
ACNR:3:I.Ch0HHAlarm	1		Decimal	BOOL
ACNR:3:I.Ch0Underrange	0		Decimal	BOOL
ACNR:3:I.Ch0Overrange	1		Decimal	BOOL
ACNR:3:I.Ch1Status	2#1010_1001		Binary	SINT
ACNR:3:I.Ch1Fault	1		Decimal	BOOL
ACNR:3:I.Ch1Calibration	0		Decimal	BOOL
ACNR:3:I.Ch1LAlarm	0		Decimal	BOOL
ACNR:3:I.Ch1HAlarm	1		Decimal	BOOL
ACNR:3:I.Ch1LLAlarm	0		Decimal	BOOL
ACNR:3:I.Ch1HHAlarm	1		Decimal	BOOL
ACNR:3:I.Ch1Underrange	0		Decimal	BOOL
ACNR:3:I.Ch1Overrange	1		Decimal	BOOL

- ACNR:I or ACNR:O (rack optimized inputs/outputs)



ACNR:I	{...}	{...		AB:1734_
ACNR:I.SlotStatusBits0_31	2#1111_1111_1111_1111_1111_1111_1111_1001		Binary	DINT
ACNR:I.SlotStatusBits32_63	2#1111_1111_1111_1111_1111_1111_1111_1111		Binary	DINT
ACNR:I.Data	{...}	{...	Binary	SINT[4]
ACNR:O	{...}	{...		AB:1734_
ACNR:O.Data	{...}	{...	Binary	SINT[4]
ACNR:O.Data[0]	2#0000_0000		Binary	SINT
ACNR:O.Data[1]	2#0000_0011		Binary	SINT
ACNR:O.Data[2]	2#0000_0000		Binary	SINT
ACNR:O.Data[3]	2#0000_0000		Binary	SINT

Use the controller tags in your ladder program to read input data or write output data.

- For RSLogix5000 programming instructions, refer to RSLogix 5000 Configuration and Programming for the Logix5000 Family of Controllers, publication no. RLD300GR.
- For ControlLogix controller information, refer to ControlLogix System User Manual, publication 1756-UM001.

Slot Status Bits

The Slot Status bits display the connection status for each of the POINT I/O modules that use a rack optimized connection.

- Bit 0 corresponds to the rack optimized connection in the 1734-ACNR slot 0.
- Each of the other bits (1-64) correspond to a POINT I/O module that may be installed in the POINT I/O backplane.

In this example, the 1734-ACNR adapter is using 2 rack optimized connections. Slot 1 is a 1734-OB2E module and slot 2 is a 1734-IB2 module, with both modules installed and operating correctly with 0=no error and 1=connection error (typically, module removed/missing).

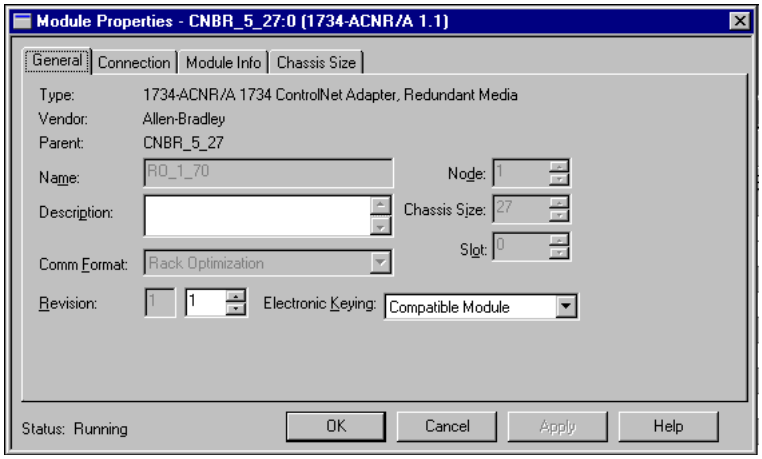
Change Configuration Data

One way to change the configuration data for a POINT I/O module:

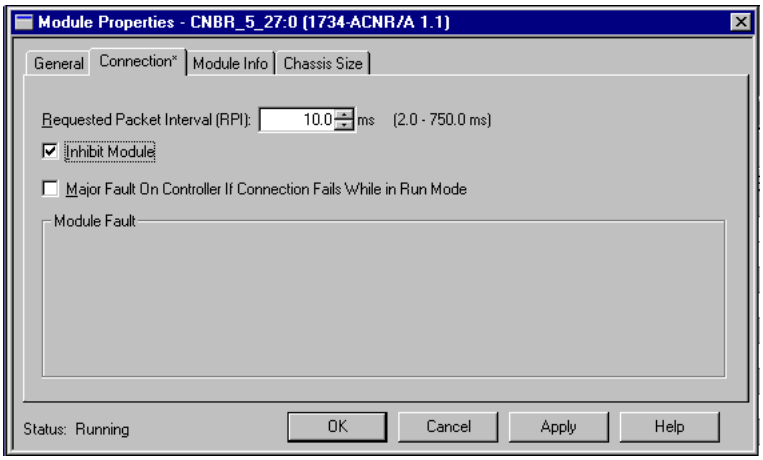
1. Enter the new configuration data into the controller tags.
2. Select Module or Adapter in the I/O configuration tree.
3. Right-click Properties.

IMPORTANT When your first add an I/O module to the I/O configuration, the default parameters are assigned. To change these default values, you must modify the controller reference tags associated with the I/O module. To download the new configuration, you must re-initiate the connection to the I/O module. This download is best achieved by inhibiting and uninhibiting the module.

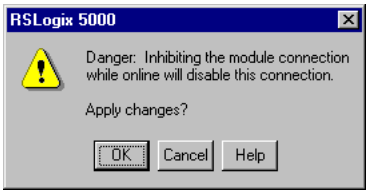
4. Select Properties.



5. Click on the Connection tab.
6. Check the Inhibit Module checkbox.

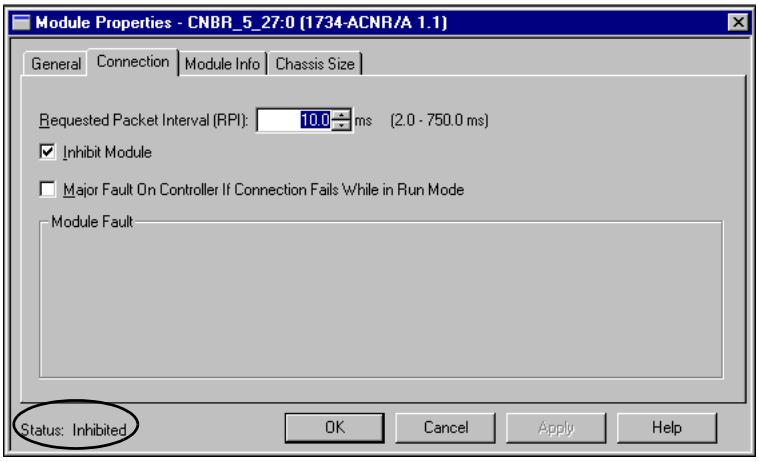


7. Click Apply.



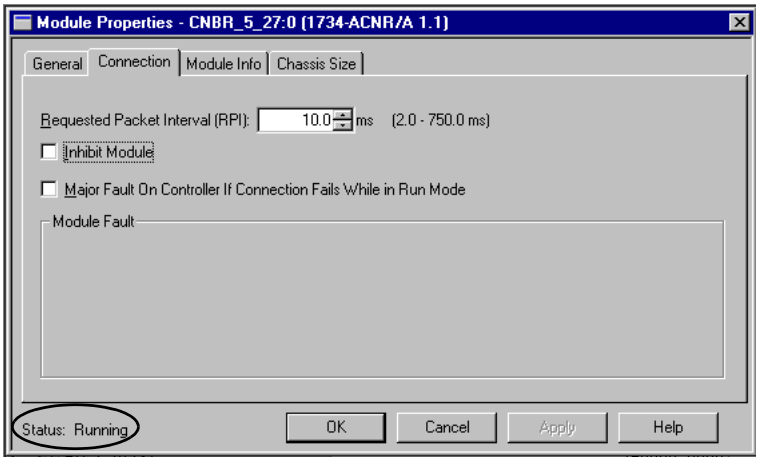
8. Click OK to confirm disabling the connection.

   The connection is now inhibited.



9. Uncheck the Inhibit Module checkbox to disable the inhibit module function.

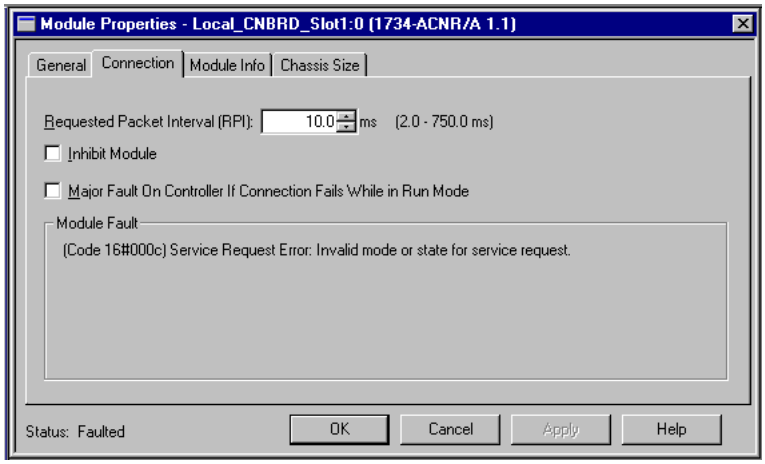
10. Click Apply to download the configuration data.



Note that the connection status is now running.

Recover from an Overloaded 1734-ACNR Adapter

The overload error (16#000c) appears in the Module Properties dialog.



This is a recoverable fault.

Once the 1734-ACNR adapter determines that it is overloaded, it drops all connections. It will refuse all connections until you take action - reset or power cycle the 1734-ACNR adapter, or repair any bad input devices and wiring to I/O modules.

The 1734-ACNR adapter will behave as follows.

- The 1734-ACNR adapter supports an overload condition of a grace period of 2.5 seconds to absorb traffic peaks, then it closes all connections to POINT I/O modules.
- POINT I/O modules assume their user programmed safe states quickly.

- The 1734-ACNR adapter removes all of its ControlNet connections.
- The 1734-ACNR adapter enters into a state where connections are not permitted.
- The 1734-ACNR adapter responds to any connection request with a unique error. General Status 0x0C is the unique error code that identifies the 1734-ACNR overload mode.
- The1 734-ACNR Adapter Status LED flashes red, indicating a recoverable fault.
- In this no connections allowed state, the adapter continues to process messages. This gives you the option of issuing a module reset to leave the no connections allowed state.

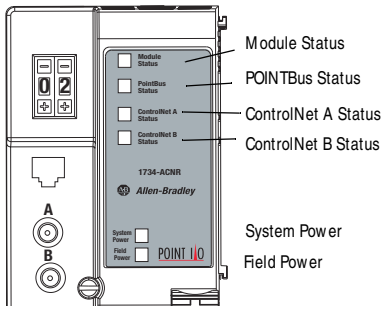
If you encouter this overloaded state, you will not have to troubleshoot the connections being made and dropped; the 1734-ACNR overload error will be latched.

Alternatively, if you anticipate this event in a fault situation, you can clear the fault via your program.

Diagnostics

Use the Indicators to Troubleshoot

Use these indicators to help troubleshoot problems with the adapter.



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Indication	Probable Cause
Field Power	
Off	Not active; field power is off
Green	Power on; 24V present
System Power	
Off	Not active; field power is off or dc-dc converter problem
Green	System power on; dc-dc converter active (5V)

Indication	Probable Cause
Module Status	
Off	No power applied to device
Alternating Red/Green	LED powerup test (module self-test)
Flashing Red	Recoverable fault has occurred: • Firmware (NVS) update • MAC ID changed • CPU load exceeded
Solid Red	Unrecoverable fault has occurred: • self test failure (checksum failure at powerup, ramtest failure at powerup) • firmware fatal error
Flashing Green	Waiting for connection or ControlNet cable break
Solid Green	Module is operating correctly (normal mode)

Indication	Probable Cause
ControlNet A/B Status	
Viewed Together	
Both Steady Off	Reset, no power or entire network interface deactivated
Alternating Red/Green	Self test mode
Alternating Red/Off	Bad/invalid node configuration (such as duplicate MAC ID)
Both Steady Red	Failed link interface
Viewed Individually	
Steady Off	Channel disabled or channel not supported
Flashing Red/Green	Invalid link configuration
Flashing Red/Off	Severe Link error - link fault or no MAC frames received
Flashing Green/Off	Temporary channel error or listen-only
Steady Green	Normal operation - MAC frames are being received without detected errors

POINTBus Status	
Off	Device not powered - check module status indicator
Alternating Red/Green	LED powerup test
Flashing Red	Recoverable fault has occurred: • at power up the number of expected modules does not equal the number of modules present • a module is missing • node fault (I/O connection timeout) • after power-up of I/O modules is taking place • collecting identities • verifying configuration
Red	Unrecoverable fault has occurred: • Adapter is bus off • Adapter has failed its duplicate MAC ID check
Flashing Green	Adapter online with no connections established • adapter chassis size has not been configured • controller in program/idle mode • ControlNet cable break
Green	Adapter online with connections established (normal operation, in run mode)

Notes:

1734-POINT I/O Module/RSLogix5000 Controller Tag Reference

1734 POINT I/O Catalog Numbers

1734 POINT I/O Catalog Number	RSLogix5000 Module Description
Digital Modules	
1734-IA2/C	2 POINT 120V AC Input
1734-IB2/C	2 POINT 10V-28V DC Input, Sink
1734-IB4/C	4 POINT 10V-28V DC Input, Sink
1734-IM2/C	2 POINT 240V AC Input
1734-IV2/C	2 POINT 10V-28V DC Input, Source
1734-IV4/C	4 POINT 10V-28V DC Input, Source
1734-OA2/C	2 POINT 120V AC Output
1734-OB2E/C	2 POINT 10V-28V DC Electronically Fused Output, Source
1734-OB2EP/C	2 POINT 10V-28V DC Electronically Fused Protected Output, Source
1734-OB4E/C	4 POINT 10V-28V DC Electronically Fused Output, Source
1734-OV2E/C	2 POINT 10V-28V DC Electronically Fused Output, Sink
1734-OV4E/C	4 POINT 10V-28V DC Electronically Fused Output, Sink
1734-OW2/C	2 POINT AC/DC Relay Output
1734-OX2/C	2 POINT Relay Output N.O./N.C.
Analog Modules	
1734-IE2C/C	2 Channel Analog Current Input
1734-IE2V/C	2 Channel Analog Voltage Input
1734-IR2/C	2 Channel RTD Input
1734-IT2I/C	2 Channel Thermocouple Input, Isolated
1734-OE2C/C	2 Channel Analog Current Output
1734-OE2V/C	2 Channel Analog Voltage Output

1734 POINT I/O Catalog Number	RSLogix5000 Module Description
Specialty I/O	
1734-232ASC/C	1 Channel ASCII Interface Module
1734-IJ/C	1 Channel 5V DC Encoder/Counter
1734-IK/C	1 Channel 15-24V DC Encoder/Counter
1734-SSI/C	1 Channel Synchronous Serial Interface
1734-VHSC24/C	1 Channel 15-24V DC Very High Speed Counter
1734-VHSC5/C	1 Channel 5V DC Very High Speed Counter

Note that all POINT I/O modules must be Series C or above for RSLogix5000 V.11 compatibility.

The 1734-232ASC/A (Series A) is presently the only exception to the Series C requirement. Use it in RSLogix5000 V.11 with a Generic Profile, OR in RSLogix5000 V.12 with a Thin Profile.

Valid Number Ranges for RSLogix5000 Data Types

Type	Number of Bits	Range
BIT	1 Bit	0 or 1
SINT	8 Bit	-128 to +127
INT	16 Bit	-32,768 to 32,767
DINT	32 Bit	-2,147,483,648 to 2,147,483,647

Accepted parameter values are dependent on POINT I/O Module type and Tag type.

Discrete 2 POINT Input

1734-IA2
2 POINT 120V AC Input
1734-IB2
2 POINT 10V-28V DC Input, Sink
1734-IM2
2 POINT 240V AC Input
1734-IV2
2 POINT 10V-28V DC Input, Source

Configuration Data	Data Type	Default Value	Valid Data Values
Filter Off On Time - POINT 0	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)
Filter On Off Time - POINT 0	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)
Filter Off On Time - POINT 1	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)
Filter On Off Time - POINT 1	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)

Input Data	Data Type	Default Value	Valid Data Values
Input Data - POINT 0, 1	SINT, BIT	0	**0=Off** 1=On

Output Data	Data Type	Default Value	Valid Data Values
None			

* POINT I/O Modules support the Unsigned Integer data type UINT (0-65,535 range).

RSLogix5000 supports the signed Integer data type INT (-32,768 to +32,767 range).

Filter Time Note:

To enter Filter values from +32,768 to +65,535 µs, use this conversion formula:

> Desired Filter Value (in µs) - 65536 = Entered Filter Value (in µs).
> Example: For a 40ms filter time, 40000 - 65536 = -25536

Discrete 4 POINT Input

1734-IB4
4 POINT 10V-28V DC Input, Sink
1734-IV4
4 POINT 10V-28V DC Input, Source

Configuration Data	Data Type	Default Value	Valid Data Values
Filter Off On Time - POINT 0	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)
Filter On Off Time - POINT 0	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)
Filter Off On Time - POINT 1	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)
Filter On Off Time - POINT 1	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)
Filter Off On Time - POINT 2	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)
Filter On Off Time - POINT 2	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)
Filter Off On Time - POINT 3	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)
Filter On Off Time - POINT 3	INT	1,000	-32,768 to 32,767 µs * (0 - 65,535)

Input Data	Data Type	Default Value	Valid Data Values
Input Data - POINT 0, 1, 2, 3	SINT, BIT	0	**0=Off** 1=On

Output Data	Data Type	Default Value	Valid Data Values
None			

* POINT I/O Modules support the Unsigned Integer data type UINT (0-65,535 range).

RSLogix5000 supports the signed Integer data type INT (-32,768 to +32,767 range).

Filter Time Note

To enter Filter values from +32,768 to +65,535 µs, use this conversion formula:

Desired Filter Value (in µs) - 65536 = Entered Filter Value (in µs).
Example: For a 40ms filter time, 40000 - 65536 = -25536

Discrete 2 POINT Output – Without Diagnostic Status

1734-OA2
2 POINT 120V AC Output
1734-OW2
2 POINT AC/DC Relay Output
1734-OX2
2 POINT Relay Output N.O./N.C.

Configuration Data	Data Type	Default Value	Valid Data Values
Fault Mode - POINT 0, 1	SINT, BIT	0	**0=Fault Value** 1=Hold Last State
Fault Value - POINT 0, 1	SINT, BIT	0	**0=Off** 1=On
Program Mode - POINT 0, 1	SINT, BIT	0	**0=Program Value** 1=Hold Last State
Program Value - POINT 0, 1	SINT, BIT	0	**0=Off** 1=On

Input Data	Data Type	Default Value	Valid Data Values
None			

Output Data	Data Type	Default Value	Valid Data Values
Output Data - POINT 0, 1	SINT, BIT	0	**0=Off** 1=On

Discrete 2 POINT Output – With Over Load and Open Load Diagnostic Status

1734-OB2E
2 POINT 10V-28V DC Electronically Fused Output, Source
1734-OB2EP
2 POINT 10V-28V DC Electronically Fused Protected Output, Source

Configuration Data	Data Type	Default Value	Valid Data Values
Fault Mode - POINT 0, 1	SINT, BIT	0	**0=Fault Value** 1=Hold Last State
Fault Value - POINT 0, 1	SINT, BIT	0	**0=Off** 1=On
Program Mode - POINT 0, 1	SINT, BIT	0	**0=Program Value** 1=Hold Last State
Program Value - POINT 0, 1	SINT, BIT	0	**0=Off** 1=On
No Load Enable - POINT 0, 1 (Wire Off Diagnostic)	SINT, BIT	1	0=Disabled **1=Enabled**
Auto Restart Enable - POINT 0, 1 (Over Load Behavior)	SINT, BIT	0	**0=Latch Off** 1=Auto Retry
Fault Latch Enable - POINT 0, 1 (Open Load or Over Load)	SINT, BIT	0	**0=No Latching** 1=Alarms Latch

Input Data	Data Type	Default Value	Valid Data Values
Status Data - POINT 0, 1 (Open Load or Over Load)	SINT, BIT	0	**0=Off** 1=On (Load Fault)

Output Data	Data Type	Default Value	Valid Data Values
Output Data - POINT 0, 1	SINT, BIT	0	**0=Off** 1=On

Discrete 2 POINT Output – With Over Load Diagnostic Status

1734-OV2E
2 POINT 10V-28V DC Electronically Fused Output, Sink

Configuration Data	Data Type	Default Value	Valid Data Values
Fault Mode - POINT 0, 1	SINT, BIT	0	**0=Fault Value** 1=Hold Last State
Fault Value - POINT 0, 1	SINT, BIT	0	**0=Off** 1=On
Program Mode - POINT 0, 1	SINT, BIT	0	**0=Program Value** 1=Hold Last State
Program Value - POINT 0, 1	SINT, BIT	0	**0=Off** 1=On
Auto Restart Enable - POINT 0, 1 (Over Load Behavior)	SINT, BIT	0	**0=Latch Off** 1=Auto Retry
Fault Latch Enable - POINT 0, 1 (Over Load)	SINT, BIT	0	**0=No Latching** 1=Alarms Latch

Input Data	Data Type	Default Value	Valid Data Values
Status Data - POINT 0, 1 (Over Load)	SINT, BIT	0	**0=Off** 1=On (Load Fault)

Output Data	Data Type	Default Value	Valid Data Values
Output Data - POINT 0, 1	SINT, BIT	0	**0=Off** 1=On

Discrete 4 POINT Output – With Over Load and Open Load Diagnostic Status

1734-OB4E
4 POINT 10V-28V DC Electronically Fused Output, Source

Configuration Data	Data Type	Default Value	Valid Data Values
Fault Mode - POINT 0, 1, 2, 3	SINT, BIT	0	**0=Fault Value** 1=Hold Last State
Fault Value - POINT 0, 1, 2, 3	SINT, BIT	0	**0=Off** 1=On
Program Mode - POINT 0, 1, 2, 3	SINT, BIT	0	**0=Program Value** 1=Hold Last State
Program Value - POINT 0, 1, 2, 3	SINT, BIT	0	**0=Off** 1=On
No Load Enable - POINT 0, 1, 2, 3 (Wire Off Diagnostic)	SINT, BIT	1	0=Disabled **1=Enabled**
Auto Restart Enable - POINT 0, 1, 2, 3 (Over Load Behavior)	SINT, BIT	0	**0=Latch Off** 1=Auto Retry
Fault Latch Enable - POINT 0, 1, 2, 3 (Open Load or Over Load)	SINT, BIT	0	**0=No Latching** 1=Alarms Latch

Input Data	Data Type	Default Value	Valid Data Values
Status Data - POINT 0, 1, 2, 3 (Open Load or Over Load)	SINT, BIT	0	**0=Off** 1=On (Load Fault)

Output Data	Data Type	Default Value	Valid Data Values
Output Data - POINT 0, 1, 2, 3	SINT, BIT	0	**0=Off** 1=On

Discrete 4 POINT Output – With Over Load Diagnostic Status

1734-OV4E
4 POINT 10V-28V DC Electronically Fused Output, Sink

Configuration Data	Data Type	Default Value	Valid Data Values
Fault Mode - POINT 0, 1, 2, 3	SINT, BIT	0	**0=Fault Value** 1=Hold Last State
Fault Value - POINT 0, 1, 2, 3	SINT, BIT	0	**0=Off** 1=On
Program Mode - POINT 0, 1, 2, 3	SINT, BIT	0	**0=Program Value** 1=Hold Last State
Program Value - POINT 0, 1, 2, 3	SINT, BIT	0	**0=Off** 1=On
Auto Restart Enable - POINT 0, 1, 2, 3 (Over Load Behavior)	SINT, BIT	0	**0=Latch Off** 1=Auto Retry
Fault Latch Enable - POINT 0, 1, 2, 3 (Over Load)	SINT, BIT	0	**0=No Latching** 1=Alarms Latch

Input Data	Data Type	Default Value	Valid Data Values
Status Data - POINT 0, 1, 2, 3 (Over Load)	SINT, BIT	0	**0=Off** 1=On (Load Fault)

Output Data	Data Type	Default Value	Valid Data Values
Output Data - POINT 0, 1, 2, 3	SINT, BIT	0	**0=Off** 1=On

Analog 2 Channel Input

1734-IE2C
2 Channel Analog Current Input

Configuration Data	Data Type	Default Value	Valid Data Values
Low Engineering Channel 0	INT	3,277	-32,768 to 32,767
High Engineering Channel 0	INT	16,383	-32,768 to 32,767
Digital Filter Channel 0	INT	0	0 to 10,000 ms
Low Alarm Limit Channel 0	INT	3,113	-32,768 to 32,767
High Alarm Limit Channel 0	INT	16,547	-32,768 to 32,767
Low Low Alarm Limit Channel 0	INT	2,867	-32,768 to 32,767
High High Alarm Limit Channel 0	INT	16,793	-32,768 to 32,767
Range Type Channel 0	SINT	3	**3=4-20mA** 8=0-20mA
Limit Alarm Latch Channel 0	SINT	0	**0=No Latching** 1=Alarms Latch
Alarm Disable Channel 0	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled
Low Engineering Channel 1	INT	3,277	-32,768 to 32,767
High Engineering Channel 1	INT	16,383	-32,768 to 32,767
Digital Filter Channel 1	INT	0	0 to 10,000 ms
Low Alarm Limit Channel 1	INT	3,113	-32,768 to 32,767
High Alarm Limit Channel 1	INT	16,547	-32,768 to 32,767
Low Low Alarm Limit Channel 1	INT	2,867	-32,768 to 32,767
High High Alarm Limit Channel 1	INT	16,793	-32,768 to 32,767
Range Type Channel 1	SINT	3	**3=4-20mA** 8=0-20mA
Limit Alarm Latch Channel 1	SINT	0	**0=No Latching** 1=Alarms Latch
Alarm Disable Channel 1	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled
Notch Filter **(Channel 0 & 1)**	SINT	2	1=50Hz **2=60Hz** 4=250Hz 6=500Hz
Real Time Sample **(Channel 0 & 1)**	INT	100	0 to 10,000 ms

1734-IE2C
2 Channel Analog Current Input

Input Data	Data Type	Default Value	Valid Data Values
Data Channel 0	INT	0	-32,768 to 32,767
Data Channel 1	INT	0	-32,768 to 32,767
Status Byte Channel 0	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 High Alarm Bit 4 Low Low Alarm Bit 5 High High Alarm Bit 6 Underrange Bit 7 Overrange
Status Byte Channel 1	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 High Alarm Bit 4 Low Low Alarm Bit 5 High High Alarm Bit 6 Underrange Bit 7 Overrange

Output Data	Data Type	Default Value	Valid Data Values
None			

1734-IE2V
2 Channel Analog Voltage Input

Configuration Data	Data Type	Default Value	Valid Data Values
Low Engineering Channel 0	INT	0	-32,768 to 32,767
High Engineering Channel 0	INT	10,000	-32,768 to 32,767
Digital Filter Channel 0	INT	0	0 to 10,000 ms
Low Alarm Limit Channel 0	INT	500	-32,768 to 32,767
High Alarm Limit Channel 0	INT	9,500	-32,768 to 32,767
Low Low Alarm Limit Channel 0	INT	200	-32,768 to 32,767
High High Alarm Limit Channel 0	INT	9,800	-32,768 to 32,767
Range Type Channel 0	SINT	2	0=-10 to +10V 2=0 to 10V
Limit Alarm Latch Channel 0	SINT	0	**0=No Latching** 1=Alarms Latch
Alarm Disable Channel 0	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled
Low Engineering Channel 1	INT	0	-32,768 to 32,767
High Engineering Channel 1	INT	10,000	-32,768 to 32,767
Digital Filter Channel 1	INT	0	0 to 10,000 ms
Low Alarm Limit Channel 1	INT	500	-32,768 to 32,767
High Alarm Limit Channel 1	INT	9,500	-32,768 to 32,767
Low Low Alarm Limit Channel 1	INT	200	-32,768 to 32,767
High High Alarm Limit Channel 1	INT	9,800	-32,768 to 32,767
Range Type Channel 1	SINT	2	0=-10 to +10V **2=0 to 10V**
Limit Alarm Latch Channel 1	SINT	0	**0=No Latching** 1=Alarms Latch
Alarm Disable Channel 1	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled
Notch Filter **(Channel 0 & 1)**	SINT	2	1=50Hz **2=60Hz** 4=250Hz 6=500Hz
Real Time Sample **(Channel 0 & 1)**	INT	100	0 to 10,000 ms

1734-IE2V
2 Channel Analog Voltage Input

Input Data	Data Type	Default Value	Valid Data Values
Data Channel 0	INT	0	-32,768 to 32,767
Data Channel 1	INT	0	-32,768 to 32,767
Status Byte Channel 0	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 High Alarm Bit 4 Low Low Alarm Bit 5 High High Alarm Bit 6 Underrange Bit 7 Overrange
Status Byte Channel 1	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 High Alarm Bit 4 Low Low Alarm Bit 5 High High Alarm Bit 6 Underrange Bit 7 Overrange

Output Data	Data Type	Default Value	Valid Data Values
None			

1734-IR2
2 Channel RTD Input

Configuration Data	Data Type	Default Value	Valid Data Values
Low Engineering Channel 0	INT	1,000	-32,768 to 32,767
High Engineering Channel 0	INT	5,000	-32,768 to 32,767
Digital Filter Channel 0	INT	0	0 to 10,000 ms
Low Alarm Limit Channel 0	INT	-32,768	-32,768 to 32,767
High Alarm Limit Channel 0	INT	32,767	-32,768 to 32,767
Low Low Alarm Limit Channel 0	INT	-32,768	-32,768 to 32,767
High High Alarm Limit Channel 0	INT	32,767	-32,768 to 32,767
Limit Alarm Latch Channel 0	SINT	0	**0=No Latching** 1=Alarms Latch
Alarm Disable Channel 0	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled
Sensor Type Channel 0	SINT	1	0=Ohms **1=100 ΩPt α385** 2=200 ΩPt α385 5=100 ΩJPt α3916 6=200 ΩJPt α3916 9=10 ΩCu α427 10=120 ΩNi α672 11=100 ΩNi α618 12=120 ΩNi α618
Temperature Mode Channel 0	SINT	1	0=Custom Scale **1=°C** 2=°F 3=°K 4=°R
Low Engineering Channel 1	INT	1,000	-32,768 to 32,767
High Engineering Channel 1	INT	5,000	-32,768 to 32,767
Digital Filter Channel 1	INT	0	0 to 10,000 ms
Low Alarm Limit Channel 1	INT	-32,768	-32,768 to 32,767
High Alarm Limit Channel 1	INT	32,767	-32,768 to 32,767
Low Low Alarm Limit Channel 1	INT	-32,768	-32,768 to 32,767
High High Alarm Limit Channel 1	INT	32,767	-32,768 to 32,767
Limit Alarm Latch Channel 1	SINT	0	**0=No Latching** 1=Alarms Latch
Alarm Disable Channel 1	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled

1734-IR2
2 Channel RTD Input

Configuration Data	Data Type	Default Value	Valid Data Values
Sensor Type Channel 1	SINT	1	0=Ohms **1=100 ΩPt α385** 2=200 ΩPt α385 5=100 ΩJPt α3916 6=200 ΩJPt α3916 9=10 ΩCu α427 10=120 ΩNi α672 11=100 ΩNi α618 12=120 ΩNi α618
Temperature Mode Channel 1	SINT	1	0=Custom Scale **1=°C** 2=°F 3=°K 4=°R
Notch Filter **(Channel 0 & 1)**	SINT	1	0=50Hz **1=60Hz** 2=100Hz 3=120Hz 4=200Hz 5=240Hz 6=300Hz 7=400Hz 8=480Hz

Input Data	Data Type	Default Value	Valid Data Values
Data Channel 0	INT	0	-32,768 to 32,767
Data Channel 1	INT	0	-32,768 to 32,767
Status Byte Channel 0	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 High Alarm Bit 4 Low Low Alarm Bit 5 High High Alarm Bit 6 Underrange Bit 7 Overrange
Status Byte Channel 1	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 High Alarm Bit 4 Low Low Alarm Bit 5 High High Alarm Bit 6 Underrange Bit 7 Overrange
Output Data	**Data Type**	**Default Value**	**Valid Data Values**
None			

1734-IT2
2 Channel Thermocouple Input, Isol.

Configuration Data	Data Type	Default Value	Valid Data Values
Cold Junction Notch Filter	SINT	1	0=50Hz **1=60Hz**
Cold Junction Mode	SINT	1	0=None **1=Channel 0** 2=Channel 1 3=Average Both
Low Engineering Channel 0	INT	0	-32,768 to 32,767
High Engineering Channel 0	INT	7,000	-32,768 to 32,767
Alarm Disable Channel 0	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled
Limit Alarm Latch Channel 0	SINT	0	**0=No Latching** 1=Alarms Latch
Notch Filter Channel 0	SINT	1	0=50Hz **1=60Hz** 2=100Hz 3=120Hz 4=200Hz 5=240Hz 6=300Hz 7=400Hz 8=480Hz
Sensor Type Channel 0	SINT	5	0=mV 1=B 2=C 3=E 4=J **5=K** 6=N 7=R 8=S 9=T
Digital Filter Channel 0	INT	0	0 to 10,000 ms
Low Alarm Limit Channel 0	INT	-32,768	-32,768 to 32,767
High Alarm Limit Channel 0	INT	32,767	-32,768 to 32,767
Low Low Alarm Limit Channel 0	INT	-32,768	-32,768 to 32,767
High High Alarm Limit Channel 0	INT	32,767	-32,768 to 32,767

1734-IT2
2 Channel Thermocouple Input, Isol.

Configuration Data	Data Type	Default Value	Valid Data Values
Temperature Mode Channel 0	SINT	1	0=mV/Custom Scale **1=°C** 2=°F 3=°K 4=°R
Cold Junction Enable Channel 0	SINT	1	0=Disabled **1=Enabled**
Cold Junction Offset Channel 0	INT	0	0 to 7,000 (0.00-70.00)
Low Engineering Channel 1	INT	0	-32,768 to 32,767
High Engineering Channel 1	INT	7,000	-32,768 to 32,767
Alarm Disable Channel 1	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled
Limit Alarm Latch Channel 1	SINT	0	**0=No Latching** 1=Alarms Latch
Notch Filter Channel 1	SINT	1	0=50Hz **1=60Hz** 2=100Hz 3=120Hz 4=200Hz 5=240Hz 6=300Hz 7=400Hz 8=480Hz
Sensor Type Channel 1	SINT	5	0=mV 1=B 2=C 3=E 4=J **5=K** 6=N 7=R 8=S 9=T
Digital Filter Channel 1	INT	0	0 to 10,000 ms
Low Alarm Limit Channel 1	INT	-32,768	-32,768 to 32,767
High Alarm Limit Channel 1	INT	32,767	-32,768 to 32,767
Low Low Alarm Limit Channel 1	INT	-32,768	-32,768 to 32,767
High High Alarm Limit Channel 1	INT	32,767	-32,768 to 32,767

1734-IT2
2 Channel Thermocouple Input, Isol.

Configuration Data	Data Type	Default Value	Valid Data Values
Temperature Mode Channel 1	SINT	1	0=mV/Custom Scale **1=°C** 2=°F 3=°K 4=°R
Cold Junction Enable Channel 1	SINT	1	0=Disabled **1=Enabled**
Cold Junction Offset Channel 1	INT	0	0 to 7,000 (0.00-70.00)

Input Data	Data Type	Default Value	Valid Data Values
Data Channel 0	INT	0	-32,768 to 32,767
Data Channel 1	INT	0	-32,768 to 32,767
Status Byte Channel 0	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 HighAlarm Bit 4 Low Low Alarm Bit 5 HighHighAlarm Bit 6 Underrange Bit 7 Overrange
Status Byte Channel 1	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 HighAlarm Bit 4 Low Low Alarm Bit 5 HighHighAlarm Bit 6 Underrange Bit 7 Overrange
Cold Junction Data	INT	0	-32,768 to 32,767

Output Data	Data Type	Default Value	Valid Data Values
None			

Analog 2 Channel Output

1734-OE2C
2 Channel Analog Current Output

Configuration Data	Data Type	Default Value	Valid Data Values
Fault Value Channel 0	INT	0	-32,768 to 32,767
Program Value Channel 0	INT	0	-32,768 to 32,767
Low Engineering Channel 0	INT	1,638	-32,768 to 32,767
High Engineering Channel 0	INT	8,191	-32,768 to 32,767
Low Limit Channel 0	INT	-32,768	-32,768 to 32,767
High Limit Channel 0	INT	32,767	-32,768 to 32,767
Range Type Channel 0	SINT	0	**0=4-20mA** 2=0-20mA
Fault Mode Channel 0	SINT	1	0=Hold Last State 1=Go to Low Clamp 2=Go to High Clamp 3=Go to Fault Value
Idle Mode Channel 0	SINT	1	0=Hold Last State **1=Go to Low Clamp** 2=Go to High Clamp 3=Go to Fault Value
Limit Alarm Latch Channel 0	SINT	0	**0=No Latching** 1=Alarms Latch
Alarm Disable Channel 0	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled
Fault Value Channel 1	INT	0	-32,768 to 32,767
Program Value Channel 1	INT	0	-32,768 to 32,767
Low Engineering Channel 1	INT	1,638	-32,768 to 32,767
High Engineering Channel 1	INT	8,191	-32,768 to 32,767
Low Limit Channel 1	INT	-32,768	-32,768 to 32,767
High Limit Channel 1	INT	32,767	-32,768 to 32,767
Range Type Channel 1	SINT	0	**0=4-20mA** 2=0-20mA
Fault Mode Channel 1	SINT	1	0=Hold Last State **1=Go to Low Clamp** 2=Go to High Clamp 3=Go to Fault Value

1734-OE2C
2 Channel Analog Current Output

Configuration Data	Data Type	Default Value	Valid Data Values
Idle Mode Channel 1	SINT	1	0=Hold Last State **1=Go to Low Clamp** 2=Go to High Clamp 3=Go to Fault Value
Limit Alarm Latch Channel 1	SINT	0	**0=No Latching** 1=Alarms Latch
Alarm Disable Channel 1	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled

Input Data	Data Type	Default Value	Valid Data Values
Status Byte Channel 0	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 High Alarm
Status Byte Channel 1	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 High Alarm

Output Data	Data Type	Default Value	Valid Data Values
Data Channel 0	INT	0	-32,768 to 32,767
Data Channel 1	INT	0	-32,768 to 32,767

1734-OE2V
2 Channel Analog Voltage Output

Configuration Data	Data Type	Default Value	Valid Data Values
Fault Value Channel 0	INT	0	-32,768 to 32,767
Program Value Channel 0	INT	0	-32,768 to 32,767
Low Engineering Channel 0	INT	0	-32,768 to 32,767
High Engineering Channel 0	INT	10,000	-32,768 to 32,767
Low Limit Channel 0	INT	-32,768	-32,768 to 32,767
High Limit Channel 0	INT	32,767	-32,768 to 32,767
Range Type Channel 0	SINT	1	**1=0 to 10V** 3=-10 to +10V
Fault Mode Channel 0	SINT	1	0=Hold Last State **1=Go to Low Clamp** 2=Go to High Clamp 3=Go to Fault Value
Idle Mode Channel 0	SINT	1	0=Hold Last State **1=Go to Low Clamp** 2=Go to High Clamp 3=Go to Fault Value
Limit Alarm Latch Channel 0	SINT	0	**0=No Latching** 1=Alarms Latch
Alarm Disable Channel 0	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled
Fault Value Channel 1	INT	0	-32,768 to 32,767
Program Value Channel 1	INT	0	-32,768 to 32,767
Low Engineering Channel 1	INT	0	-32,768 to 32,767
High Engineering Channel 1	INT	10,000	-32,768 to 32,767
Low Limit Channel 1	INT	-32,768	-32,768 to 32,767
High Limit Channel 1	INT	32,767	-32,768 to 32,767
Range Type Channel 1	SINT	1	**1=0 to 10V** 3=-10 to +10V
Fault Mode Channel 1	SINT	1	0=Hold Last State **1=Go to Low Clamp** 2=Go to High Clamp 3=Go to Fault Value
Idle Mode Channel 1	SINT	1	0=Hold Last State **1=Go to Low Clamp** 2=Go to High Clamp 3=Go to Fault Value

1734-OE2V
2 Channel Analog Voltage Output

Configuration Data	Data Type	Default Value	Valid Data Values
Limit Alarm Latch Channel 1	SINT	0	**0=No Latching** 1=Alarms Latch
Alarm Disable Channel 1	SINT	0	**0=Alarms Enabled** 1=Alarms Disabled

Input Data	Data Type	Default Value	Valid Data Values
Status Byte Channel 0	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 High Alarm
Status Byte Channel 1	SINT	0	Bit 0 Fault Bit 1 Calibration Bit 2 Low Alarm Bit 3 High Alarm

Output Data	Data Type	Default Value	Valid Data Values
Data Channel 0	INT	0	-32,768 to 32,767
Data Channel 1	INT	0	-32,768 to 32,767

Specialty I/O

1734-VHSC24
1 Channel 15-24V DC Very High Speed Counter
1734-VHSC5
1 Channel 5V DC Very High Speed Counter

Configuration Data	Data Type	Default Value	Valid Data Values
Counter Config	SINT	0	
Config_0	BIT 0		**0000=0=Counter**
Config_1	BIT 1		0001=1=Encoder X1
Config_2	BIT 2		0010=2=Encoder X2
Config_3	BIT 3		0011=3=PWM 0100=4=Encoder X4 0101=5=Period/Rate 0110=6=Continuous/Rate 0111=7=Rate Measurement 1000=8=Pulse Generator
Mode_4	BIT 4		**000=Store Count Disable**
Mode_5	BIT 5		001=Store/Continue
Mode_6	BIT 6		010=Store/Wait/Resume 011=Store,Reset/Wait/Start 100=Store,Reset/Start
Z Input	BIT 7		**0=Z Input Not Inverted** 1=Z Input Is Inverted
Filter	SINT	120	
Filter_0	BIT 0	(0x78H)	0000=No Filter
Filter_1	BIT 1		0001=50 KHz
Filter_2	BIT 2		0010=5 KHz
Filter_3	BIT 3		0100=500 Hz **1000=50 Hz**
FilterA	BIT 4		0=Input A/B/Z Not Filtered
FilterB	BIT 5		**1=Input A/B/Z Is Filtered**
FilterZ	BIT 6		
Decimal Position	SINT	0	Counter Config 0, 1, 2, 3, 4: -128 to +127 (0 - 255) Counter Config 5, 6, & 7: -4 to +2
Time Base (in 10 ms intervals)	INT	0	Counter Config 3 & 7 only: 0-3000 ms (10 ms to 3 sec)
Gate Interval (Product of Time Base x Gate Interval must be ≤3000 ms)	SINT	0	Counter Config 3 & 7 only: -128 to +127 (0 - 200)

1734-VHSC24
1 Channel 15-24V DC Very High Speed Counter
1734-VHSC5
1 Channel 5V DC Very High Speed Counter

Configuration Data	Data Type	Default Value	Valid Data Values
Scalar	SINT	0	Counter Config 5, 6, 8 only: -128 to +127 (0 - 255) Single Bit only: 0, 1, 2, 4, 8, 16, 32, 64, -128
Output Ties 0 Out 0 Window 1 Out 0 Window 2 Out 0 Window 3 Out 0 Window 4	SINT BIT 0 BIT 1 BIT 2 BIT 3	0	**0=Output 0 Not Tied** 1=Output 0 Tied to Window Counter Config 3 (PWM): Output 0 Window 1 PWM In
Output Ties 1 Out 1 Window 1 Out 1 Window 2 Out 1 Window 3 Out 1 Window 4	SINT BIT 0 BIT 1 BIT 2 BIT 3	0	**0=Output 1 Not Tied** 1=Output 1 Tied to Window Counter Config 3 (PWM): Output 1 Window 1 PWM In
Rollover	DINT	16,777,215	1 to 16,777,216
Preset (< Rollover)	DINT	0	0 to 16,777,215
On Value 1 Off Value 1 On Value 2 Off Value 2 On Value 3 Off Value 3 On Value 4 Off Value 4	DINT DINT DINT DINT DINT DINT DINT DINT	0 0 0 0 0 0 0 0	Counter Config 3, 5, 6, 7: 0 to 16,777,215 Counter Config 0, 1, 2, 4: 0 to Rollover Value
SS PWM Value (<0 or >9500 =Hold Last State)	INT	0	**0** to 9500 (**0.00**% to 95.00%)
SS Counter Control SS Counter Reset SS Counter Preset SS Value Reset (Stored / Accum. Count)	SINT BIT 0 BIT 1 BIT 2	0	 **0=Count Unchanged** 1=Count Cleared **0=Count Unchanged** 1=Count Set to Preset **0=Count Unchanged** 1=Count Cleared

1734-VHSC24
1 Channel 15-24V DC Very High Speed Counter
1734-VHSC5
1 Channel 5V DC Very High Speed Counter

Configuration Data	Data Type	Default Value	Valid Data Values
SS Output Control	SINT	0	
SS Out 0 Force	BIT 0		**0=Output Off** 1=Output Forced On
SS Out 0 En	BIT 1		**0=Output Disabled** 1=Output Enabled
SS Out 0 Electronic Fuse	BIT 2		**0=Auto Retry** 1=Latch Off
SS Out 0 Diagnostic Speed	BIT 3		**0=< 8ms Response** 1=50ms Response
SS Out 1 Force	BIT 4		**0=Output Off** 1=Output Forced On
SS Out 1 En	BIT 5		**0=Output Disabled** 1=Output Enabled
SS Out 1 Electronic Fuse	BIT 6		**0=Auto Retry** 1=Latch Off
SS Out 1 Diagnostic Speed	BIT 7		**0=< 8ms Response** 1=50ms Response

To enter values from +128 to +255, use these conversion formulas:

Decimal Position Note:

Desired Decimal Position Value - 256 = Entered Decimal Position Value.
Example: For a divisor of 200, 200 - 256 = -56

Gate Interval Note:

Desired Gate Interval Value - 256 = Entered Gate Interval Value.
Example: For a Gate Interval of 200, 200 - 256 = -56

Scalar Note:

Desired Scalar Value - 256 = Entered Scalar Value.
Example: For a Scalar of 128, 128 - 256 = -128

1734-VHSC24
1 Channel 15-24V DC Very High Speed Counter
1734-VHSC5
1 Channel 5V DC Very High Speed Counter

Input Data	Data Type	Default Value	Valid Data Values
Present Data	DINT	0	0 to 16,777,215
Stored Data	DINT	0	-2,147,483,648 to 2,147,483,647 (0 - 4,294,967,295)
Status	INT	0	
Zero Frequency Detected	BIT 1		**0=No Fault** 1=Fault Detected
Stored Data Count_2	BIT 2		Cycles thru **0,** 1, 2, 3, **0**,
Stored Data Count_3	BIT 3		Increments after update
A Input Status	BIT 4		**0=Input A/B/Z is Off**
B Input Status	BIT 5		1=Input A/B/Z is On
Z Input Status	BIT 6		
Output Status_8 (Output 0)	BIT 8		**0=Output is Off**
Output Status_9 (Output 1)	BIT 9		1=Output is On
Output Fault_10 (Output 0)	BIT 10		**0=No Fault**
Output Fault_11 (Output 1)	BIT 11		1=Open or Over Load
Not Ready	BIT 13		**0=Module Ready** 1=Module Initializing
EEPROM Fault	BIT 14		**0=No Fault** 1=EEPROM data bad
Program Fault (incomplete / incorrect / conflict)	BIT 15		**0=No Fault** 1=Bad Configuration (See *Program Fault Note* on the next page)

Stored Data Note:

To interpret values from -2,147,483,648 to -1, use this conversion formula:

Stored Data Tag Value + 4,294,967,296 = Actual Stored Data Tag Value.

Example: For a read value of -1,794,967,296:

-1,794,967,296 + 4,294,967,296 = 2,500,000,000 actual value

Program Fault Note

Programming Fault Error bit - If an incomplete, incorrect, or conflicting set of configuration parameters are sent to the module, the Program Fault bit will be asserted and an error code will be placed in the Programming error Code word (assembly 6816). The module will **not** enter a normal operational state. Bit definitions (decimal) for the error codes are:

10 An invalid assembly was chosen for poll consumption (0, 105 or 106 are valid).

9 The decimal point position is outside of the acceptable range.

8 Counter 0 window ON & OFF values are equal and not zero OR
Counter 0 window ON & OFF value is greater than the Rollover.

7 A tie has been connected to an unprogrammed window.

6 A configuration was selected that requires the scalar and none was programmed OR
Multiple scalars were selected.

5 The preset is out of range (Rollover).

4 A rollover of zero was programmed through PWM was not selected OR
A rollover was programmed and PWM was selected OR
Rollover is out of range (>0x01000000).

3 A configuration requiring a time base was selected and no gate interval was set OR
Gate interval is out of range (>200) OR
Product of time base and gate interval is greater than 3 seconds.

2 A time base was entered that is not a multiple of 10 OR
Time base is out of range (>3000, i.e., 3 seconds).

1 ZF/BF/AF were selected and no filter was programmed OR
Multiple filters were selected.

0 A reserved configuration/mode was programmed.

1734-VHSC24
1 Channel 15-24V DC Very High Speed Counter
1734-VHSC5
1 Channel 5V DC Very High Speed Counter

Output Data	Data Type	Default Value	Valid Data Values
PWM Value	INT	0	**0** to 9500 (**0.00**% to 95.00%)
Counter Control	SINT	0	
Counter Reset	BIT 0	0	**0=Count Unchanged** 1=Count Cleared
Counter Preset	BIT 1	0	**0=Count Unchanged** 1=Count Set to Preset
Value Reset (Stored / Accumulated Count)	BIT 2	0	**0=Count Unchanged** 1=Count Cleared
Output Control	SINT	0	
Output 0 Force	BIT 0	0	**0=Output Off** 1=Output Forced On
Output 0 Enable	BIT 1	0	**0=Output Disabled** 1=Output Enabled
Output 0 Electronic Fuse	BIT 2	0	**0=Auto Retry** 1=Latch Off
Output 0 Diagnostic Speed	BIT 3	0	**0=< 8ms Response** 1=50ms Response
Output 1 Force	BIT 4	0	**0=Output Off** 1=Output Forced On
Output 1 Enable	BIT 5	0	**0=Output Disabled** 1=Output Enabled
Output 1 Electronic Fuse	BIT 6	0	**0=Auto Retry** 1=Latch Off
Output 1 Diagnostic Speed	BIT 7	0	**0=< 8ms Response** 1=50ms Response

1734-IJ
1 Channel 5V DC Encoder / Counter
1734-IK
1 Channel 15-24V DC Encoder / Counter

Configuration Data	Data Type	Default Value	Valid Data Values
Counter Config	SINT	0	
Config_0	BIT 0		**0000=0=Counter**
Config_1	BIT 1		0001=1=Encoder X1
Config_2	BIT 2		0010=2=Encoder X2
Config_3	BIT 3		0100=4=Encoder X4 0101=5=Period/Rate 0111=7=Rate Measurement
			000=Store Count Disable
Mode_4	BIT 4		001=Store/Continue
Mode_5	BIT 5		010=Store/Wait/Resume
Mode_6	BIT 6		011=Store,Reset/Wait/Start 100=Store,Reset/Start
			0=Z Input Not Inverted
Z Input	BIT 7		1=Z Input Is Inverted
Filter	SINT	120	
Filter_0	BIT 0	(0x78H)	0000=No Filter
Filter_1	BIT 1		0001=50 KHz
Filter_2	BIT 2		0010=5 KHz
Filter_3	BIT 3		0100=500 Hz **1000=50 Hz**
FilterA	BIT 4		0=Input A/B/Z Not Filtered
FilterB	BIT 5		**1=Input A/B/Z Is Filtered**
FilterZ	BIT 6		
Decimal Position	SINT	0	Counter Config 0, 1, 2, 4: -128 to +127 (0 - 255) Counter Config 5 & 7: -4 to +2
Time Base (in 10 ms intervals)	INT	0	Counter Config 7 only: 0-3000 ms (10 ms to 3 sec)
Gate Interval (Product of Time Base x Gate Interval must be ≤3000 ms)	SINT	0	Counter Config 7 only: -128 to +127 (0 - 200)
Scalar	SINT	0	Counter Config 5 only: -128 to +127 (0 - 255) 0, 1, 2, 4, 8, 16, 32, 64, -128
Rollover	DINT	16,777,215	1 to 16,777,216
Preset (< Rollover)	DINT	0	0 to 16,777,215

1734-IJ
1 Channel 5V DC Encoder / Counter
1734-IK
1 Channel 15-24V DC Encoder / Counter

Configuration Data	Data Type	Default Value	Valid Data Values
SS Counter Control	SINT	0	
SS Counter Reset	BIT 0		**0=Count Unchanged** 1=Count Cleared
SS Counter Preset	BIT 1		**0=Count Unchanged** 1=Count Set to Preset
SS Value Reset	BIT 2		**0=Count Unchanged** 1=Count Cleared

To enter values from +128 to +255, use these conversion formulas:

Decimal Position Note:

Desired Decimal Position Value - 256 = Entered Decimal Position Value.
Example: For a divisor of 200, 200 - 256 = -56

Gate Interval Note:

Desired Gate Interval Value - 256 = Entered Gate Interval Value.
Example: For a Gate Interval of 200, 200 - 256 = -56

Scalar Note:

Desired Scalar Value - 256 = Entered Scalar Value.
Example: For a Scalar of 128, 128 - 256 = -128

1734-IJ
1 Channel 5V DC Encoder / Counter
1734-IK
1 Channel 15-24V DC Encoder / Counter

Input Data	Data Type	Default Value	Valid Data Values
Present Data	DINT	0	0 to 16,777,215
Stored Data	DINT	0	-2,147,483,648 to 2,147,483,647 (0 - 4,294,967,295)
Status	INT	0	
Zero Frequency Detected	BIT 1		**0=No Fault** 1=Fault Detected
Stored Data Count_2	BIT 2		Cycles thru **0,** 1, 2, 3, **0**,
Stored Data Count_3	BIT 3		Increments after update
A Input Status	BIT 4		**0=Input A/B/Z is Off**
B Input Status	BIT 5		1=Input A/B/Z is On
Z Input Status	BIT 6		
Not Ready	BIT 13		**0=Module Ready** 1=Module Initializing
EEPROM Fault	BIT 14		**0=No Fault** 1=EEPROM data bad
Program Fault (incomplete / incorrect / conflict)	BIT 15		**0=No Fault** 1=Bad Configuration (See *Program Fault Note* on the next page)

Stored Data Note:

To interpret values from -2,147,483,648 to -1, use this conversion formula:

Stored Data Tag Value + 4,294,967,296 = Actual Stored Data Tag Value.
Example: For a read value of -1,794,967,296:-1,794,967,296 + 4,294,967,296 = 2,500,000,000 actual value

Program Fault Note

Programming Fault Error bit - If an incomplete, incorrect, or conflicting set of configuration parameters are sent to the module, the Program Fault bit will be asserted and an error code will be placed in the Programming error Code word (assembly 6816). The module will **not** enter a normal operational state. Bit definitions (decimal) for the error codes are:

10 An invalid assembly was chosen for poll consumption (0, 105 or 106 are valid).

9 The decimal point position is outside of the acceptable range.

8 Counter 0 window ON & OFF values are equal and not zero OR
Counter 0 window ON & OFF value is greater than the Rollover.

7 A tie has been connected to an unprogrammed window.

6 A configuration was selected that requires the scalar and none was programmed OR
Multiple scalars were selected.

5 The preset is out of range (Rollover).

4 A rollover of zero was programmed through PWM was not selected OR
A rollover was programmed and PWM was selected OR
Rollover is out of range (>0x01000000).

3 A configuration requiring a time base was selected and no gate interval was set OR
Gate interval is out of range (>200) OR
Product of time base and gate interval is greater than 3 seconds.

2 A time base was entered that is not a multiple of 10 OR
Time base is out of range (>3000, i.e., 3 seconds).

1 ZF/BF/AF were selected and no filter was programmed OR
Multiple filters were selected.

0 A reserved configuration/mode was programmed

1734-IJ
1 Channel 5V DC Encoder / Counter
1734-IK
1 Channel 15-24V DC Encoder / Counter

Output Data	Data Type	Default Value	Valid Data Values
Counter Control	SINT	0	
Counter Reset	BIT 0	0	**0=Count Unchanged** 1=Count Cleared
Counter Preset	BIT 1	0	**0=Count Unchanged** 1=Count Set to Preset
Value Reset (Stored / Accumulated Count)	BIT 2	0	**0=Count Unchanged** 1=Count Cleared

1734-SSI
1 Channel Synchronous Serial Interface

Configuration Data	Data Type	Default Value	Valid Data Values
Run	SINT	1	0=Module Not Running **1=Module Is Running**
Gray Binary	SINT	1	0=Binary Code **1=Gray Code**
Word Length	SINT	13	2 to 31
Data Speed	SINT	5	**5=125K Baud** 6=250K Baud 7=500K Baud 8=1M Baud 9=2M Baud
G2B Convert (Gray to Binary)	SINT	0	**0=No Convert** 1=Convert
Standardization (Divide / Shift using Trailing)	SINT	0	**0=No Standardization** 1=Apply Standardization
SSI Word Delay Time	INT	64	-32,768 to 32,767 µs (16 - 65,535)
Trailing (No. of Trailing Bits)	SINT	0	**0** to 16
Input Latch Control InputLatch_0 InputLatch_1	SINT BIT 0 BIT 1	0	**00=Off** 01=Falling Edge of Input 10=Rising Edge of Input 11=Both Edges of Input
Sensor Resolution (Positions per Rev. or Stroke)	INT	1	-32,768 to 32,767 counts (1 - 65,535)
Sensor Cycle (Total Revolutions or Strokes)	INT	1	-32,768 to 32,767 counts (1 - 65,535)
Compare 0 Value	DINT	0	-2,147,483,648 to 2,147,483,647 (0 - 4,294,967,295)
Compare 1 Value	DINT	0	-2,147,483,648 to 2,147,483,647 (0 - 4,294,967,295)
Compare 0 Control Compare0_0 Compare0_1	SINT BIT 0 BIT 1	0	**00=Off** 01=Up Direction 10=Down Direction 11=Both Directions

1734-SSI
1 Channel Synchronous Serial Interface

Configuration Data	Data Type	Default Value	Valid Data Values
Compare 1 Control; Compare1_0 Compare1_1	SINT BIT 0 BIT 1	0	**00=Off** 01=Up Direction 10=Down Direction 11=Both Directions

SSI Word Delay Time Note:

To enter Delay values from +32,768 to +65,535 µs, use this conversion formula:

Desired Delay Value (in µs) - 65536 = Entered Delay Value (in µs).
Example: For a 40ms delay time, 40000 - 65536 = -25536

Sensor Resolution Note:

To enter Resolution values from +32,768 to +65,535 µs, use this conversion formula:

Desired Resolution Value - 65536 = Entered Resolution Value.
Example: For a 40,000 count sensor, 40000 - 65536 = -25536

Sensor Cycle Note:

To enter Cycle values from +32,768 to +65,535, use this conversion formula:

Desired Cycle Value - 65536 = Entered Cycle Value.
Example: For 50,000 sensor cycle rotations, 50000 - 65536 = -15536

Compare 0,1 Value Note:

To enter Compare values from +2,147,483,647 to +4,294,967,295, use this conversion formula:

Desired Compare Value - 4,294,967,296 = Entered Compare Value.
Example: For a 3,000,000,000 compare value,
3,000,000,000 - 4,294,967,296 = -1,294,967,296

1734-SSI
1 Channel Synchronous Serial Interface

Input Data	Data Type	Default Value	Valid Data Values
Present Data	DINT	0	-2,147,483,648 to 2,147,483,647 (0 - 4,294,967,295)
Latched Data	DINT	0	-2,147,483,648 to 2,147,483,647 (0 - 4,294,967,295)
Status	INT	0	
Input Status	BIT 0		**0=Input is Off** 1=Input is On
Run	BIT 1		**0=Module is not Running** 1=Module is Running
Decreasing Count	BIT 2		**0=Count not Decreasing** 1=Count is Decreasing
Increasing Count	BIT 3		**0=Count not Increasing** 1=Count is Increasing
Compare0 Reached	BIT 4		**0=Compare not Reached**
Compare1 Reached	BIT 5		1=Compare was Reached
Compare0 Status	BIT 6		**0=Compare Off**
Compare1 Status	BIT 7		1=Compare On
Power Fault	BIT 8		**0=No 24Vdc Power Fault** 1=24Vdc Power Fault
Configuration Fault	BIT 9		**0=No FPGA Config Fault** 1=FPGA Config data bad
Communication Fault	BIT 10		**0=No FPGA Comm Fault** 1=FPGA Comm Fault
Input Data Fault	BIT 11		**0=No Input Data Fault** 1=Input Power Fault (short)
Data Latched	BIT 12		**0=Input Data Not Latched** 1=Input Data Latched

Present / Latched Data Note:

To interpret values from -2,147,483,648 to -1, use this conversion formula:

Stored Data Tag Value + 4,294,967,296 = Actual Stored Data Tag Value.
Example: For a read value of -1,794,967,296:
-1,794,967,296 + 4,294,967,296 = 2,500,000,000 actual value

1734-SSI
1 Channel Synchronous Serial Interface

Output Data	Data Type	Default Value	Valid Data Values
Control	SINT	0	
Latch Acknowledge	BIT 0	0	**0=Latch Not Cleared** 1=Latch Cleared
Compare 0 Acknowledge	BIT 1	0	0=Compare0 Not Reset 1=Compare0 Reset
Compare 1 Acknowledge	BIT 2	0	**0=Compare1 Not Reset** 1=Compare1 Reset
Compare 0 Select	BIT 3	0	**0=Compare0 Not Selected** 1=Compare0 Selected
Compare 1 Select	BIT 4	0	**0=Compare1 Not Selected** 1=Compare1 Selected

1734-232ASC
1 Channel ASCII Interface Module

Configuration Data	Data Type	Default Value	Valid Data Values
Serial Character Format (ASCII Format: Data Bits / Parity / Stop)	SINT	0	**0=7N2** 1=7E1 2=7O1 3=8N1 4=8N2 5=8E1 6=8O1 7=7E2 8=7O2
Serial Comm Speed (Baud Rate of the Serial Port)	SINT	0	**0=9600** 1=1200 2=2400 3=4800 4=19.2K 5=38.4K
Max Receive Characters	SINT	20	-128 to +127 (0 - 128)
Receive Start Delimiter Mode	SINT	0	**0=No Start Delimiter** 1=Exclude Start Delimiter 2=Include Start Delimiter
Receive Start Delimiter Character	SINT	58 (0x3A)	Any Valid ASCII Character (Default is Colon [:])
Receive Record End Mode	SINT	2	0=No End Delimiter 1=Exclude End Delimiter **2=Include End Delimiter**
Receive End Delimiter	SINT	13 (0x0d)	Any Valid ASCII Character (Default is Carr. Return)
Receive String Data Type	SINT	1	0=Array **1=Short String** 2=String
Pad Mode	SINT	1	0=Pad Mode Disabled **1=Pad Mode Enabled**
Pad Character	SINT	0 (0x00)	Any Valid ASCII Character (Default is NULL)
Receive Swap Mode	SINT	0	**0=Disabled** 1=16-bit Swap Enabled 2=24-bit Swap Enabled 3=32-bit Swap Enabled
DeviceNet Handshake Mode	SINT	1	0=Master/Slave handshake **1=Produce Immediate**
Max Transmit Characters	SINT	20	-128 to +127 (0 - 128)

1734-232ASC
1 Channel ASCII Interface Module

Configuration Data	Data Type	Default Value	Valid Data Values
Transmit End Delimiter Mode	SINT	2	0=No End Delimiter 1=Exclude End Delimiter **2=Include End Delimiter**
Transmit End Delimiter Character	SINT	13 (0x0d)	Any Valid ASCII Character (Default is Carr. Return)
Consume String Data Type	SINT	1	0=Array **1=Short String** 2=String
Transmit Swap Mode	SINT	0	**0=Disabled** 1=16-bit Swap Enabled 2=24-bit Swap Enabled 3=32-bit Swap Enabled
DeviceNet Record Header Mode	SINT	0	**0=Transmit Handshake** 1=Transmit Immediate

Transmit Data / Receive Data / Delimiter / Pad Character Note:

Note that "7 data bits" allows ASCII Character data values of 0 - 127, which RSLogix5000 does support in the signed Short Integer data type SINT (-128 to +127 range).

Note that "8 data bits" allows ASCII Character data values of 0 - 255. To enter values from +128 to +255, use this conversion formula:

Desired Decimal Value - 256 = Entered Decimal Value.
Example: For an ASCII Character value of 128, 128 - 256 = -128

:

1734-232ASC
1 Channel ASCII Interface Module

Input Data	Data Type	Default Value	Valid Data Values
Receive Record Number	SINT	0	-128 to +127 (0 - 255)
Status TX FIFO Overflow RX FIFO Overflow RX Parity Error Handshake Error New Data Flag	SINT BIT 0 BIT 1 BIT 2 BIT 6 BIT 7	0	 **0=No Error** 1=TX FIFO Overflow Error **0=No Error** 1=RX FIFO Overflow Error **0=No Error** 1=RX Parity Overflow Error **0=No Error** 1=Handshake Error **0=No New Data** 1=New Data Present
Length_Lo	SINT	20	-128 to +127 (0 - 128)
Length_Hi	SINT	0	0 or 1
Data[128]	SINT	0	Received ASCII Message

Output Data	Data Type	Default Value	Valid Data Values
Transmit Record Number	SINT	0	-128 to +127 (0 - 255)
Receive Record Number	SINT	0	-128 to +127 (0 - 255)
Status TX FIFO Overflow RX FIFO Overflow RX Parity Error Handshake Error New Data Flag	SINT BIT 0 BIT 1 BIT 2 BIT 6 BIT 7	0	 **0=No Error** 1=TX FIFO Overflow Error **0=No Error** 1=RX FIFO Overflow Error **0=No Error** 1=RX Parity Overflow Error **0=No Error** 1=Handshake Error **0=No New Data** 1=New Data Present
Length_Lo	SINT	20	-128 to +127 (0 - 128)
Length_Hi	SINT	0	0 or 1
Data[128]	SINT	0	Transmitted ASCII Message

Transmit Record Number/ Receive Record Number / Length_Lo Note:

Note that "7 data bits" allows Transmit / Receive record Number of Length_Lo values of 0 - 127, which RSLogix5000 does support in the signed Short Integer data type SINT (-128 to +127 range).

Note that "8 data bits" allows Transmit / Receive record Number of Length_Lo values of 0 - 255.

To enter values from +128 to +255, use this conversion formula:

> Desired Decimal Value - 256 = Entered Decimal Value.
> Example: For a Transmit / Receive record Number of Length_Lo value of 128, 128 - 256 = -128

Notes:

Numbers

A

C

D

E

H

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