

Introduction

Overview

The POINT I/O 4 channel IO-Link master module provides four channels that can be individually configured as an IO-Link master or as a standard digital I/O module. The IO-Link master module can be configured to fit any IO-Link and/or discrete application.

In IO-Link mode, the module supports four channels for IO-Link master communication with IO-Link compatible devices. In standard digital I/O mode, the module supports four channels of standard digital input or standard digital output. Standard digital input channels support IEC61131-2 type 1 input. Channels can also be disabled if not in use.

You must use this module with the following:

- 1734-AENT or 1734-AENTR, Series B EtherNet/IP adapters with firmware revision 5.012 or later
- 1734-AENT or 1734-AENTR, Series C EtherNet/IP adapters with firmware revision 6.011 or later
- Studio 5000 Logix Designer application, version 20 or later

The POINT I/O 4 channel IO-Link master module operates in IO-Link revision 1.1 and is compatible with both V1.0 and V1.1 IO-Link devices. You cannot configure the IO-Link master to operate in IO-Link revision 1.0.

Product Description

The following table explains the product identity.

Table 1 - Product Identity

Catalog Number	Product Type	Product Code	Product Name String
1734-4IOL	155	1	4 Channel IO-Link Master

Modes of Usage

The module can be used in one of the following modes:

- As IO-Link master
- As standard digital input or standard digital output modules
- As mixed IO-Link master and standard digital input or standard digital output modules
- Individual channels can also be disabled if not in use
- Fallback mode

POINT I/O 4 Channel IO-Link Master - IO-Link Mode

The POINT I/O 4 channel IO-Link master module can support IO-Link communications to IO-Link enabled devices in IO-Link master mode.

See [Chapter 3, Configure the POINT I/O 4 Channel IO-Link Master as IO-Link Master In Studio 5000 Logix Designer Application on page 19.](#)

Add a POINT I/O 4 Channel IO-Link Master Module to Studio 5000 Logix Designer Application Project

To add the POINT I/O 4 channel IO-Link master module to your Studio 5000 Logix Designer application project, do the following.

1. In the I/O Configuration tree, find the adapter.

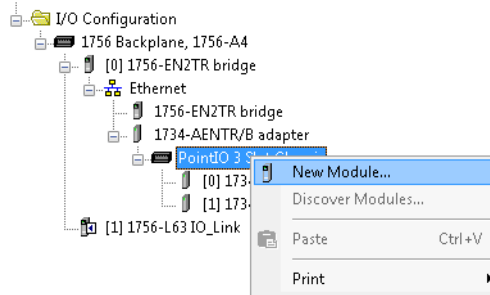


ATTENTION: The 1734-4IOL module requires one of the following:

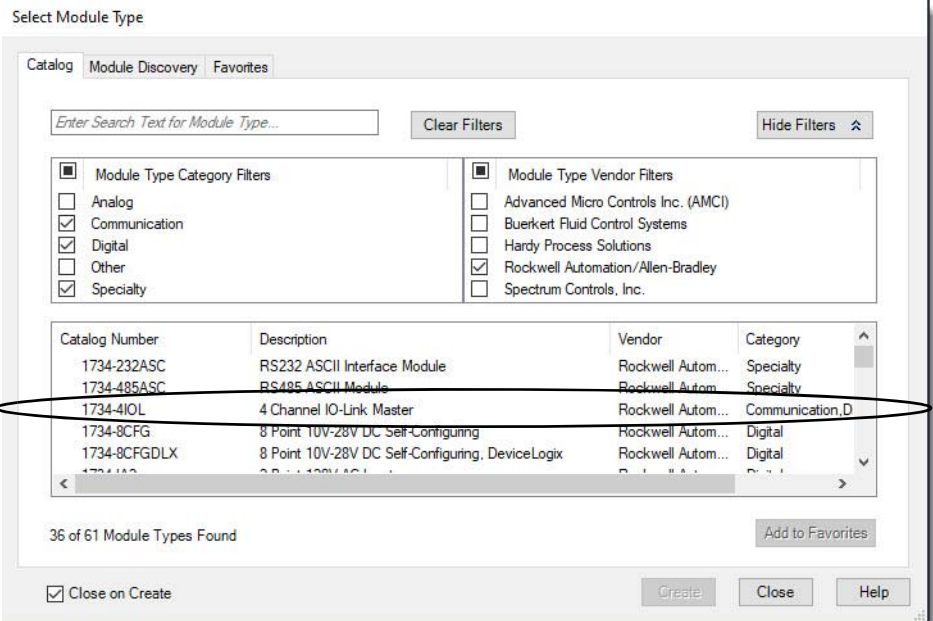
- 1734-AENT or 1734-AENTR, Series B EtherNet/IP adapters with firmware revision 5.012 or later
- 1734-AENT or 1734-AENTR, Series C EtherNet/IP adapters with firmware revision 6.011 or later

In this example, we use the 1734-AENTR adapter with the 1734-4IOL module.

2. Right-click the POINT I/O Chassis and select New Module.



3. In the Select Module Type dialog, under the Communications, Digital, or Specialty category, double-click the 1734-4IOL module.



The General tab of the Module Properties window appears.

Table 12 - Default Data Map for 1734-4IOL - Configuration Assembly Instance 100 (Continued)

Message size: 46 Bytes

Consumed Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
40	Channel 2 Fault Mode ⁽¹⁾							
41	Channel 2 Idle Mode ⁽¹⁾							
42	Channel 3 Fault Mode ⁽¹⁾							
43	Channel 3 Idle Mode ⁽¹⁾							
44	Channel 0 Input Off to On Time Delay ⁽⁵⁾							
45	Channel 0 Input On to Off Time Delay ⁽³⁾							
46	Channel 1 Input Off to On Time Delay ⁽³⁾							
47	Channel 1 Input On to Off Time Delay ⁽³⁾							
48	Channel 2 Input Off to On Time Delay ⁽³⁾							
49	Channel 2 Input On to Off Time Delay ⁽³⁾							
50	Channel 3 Input Off to On Time Delay ⁽³⁾							
51	Channel 3 Input On to Off Time Delay ⁽³⁾							

- (1) The channel mode selects the type of I/O for the channel. Valid values are:
0: Disabled
1: Standard Output (DO)
2: Standard Input (DI)
3: IO-Link
4: Fallback
- (2) This bit is examined only when the configuration assembly is received while a connection is established (a connection reconfiguration). If this bit is set the IO-Link device configuration (stored in the associated file instance) is downloaded to the device on this channel, otherwise it is not.
- (3) Process Output and Process Input sizes can be in the range of 0...32. This value is only valid when the channel is configured for IO-Link. In standard digital input and Fallback modes, 1 byte is produced and 0 bytes are consumed. In standard digital output mode, 0 bytes are produced and 1 byte is consumed. When the channel is disabled, no data is produced or consumed.
- (4) Fault and Idle conditions are only valid when the channel is configured for IO-Link or standard digital output.
- (5) Time delays are specified in 1 ms increments, valid range is 0...65 (a value of 0 disables the input filter).

Table 13 - Default Data Map for 1734-4IOL - Consumed Assembly Instance 101

Message size: 0...128 Bytes

Consumed Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0...a	Output data for Channel 0 ⁽¹⁾							
a+1...b	Output data for Channel 1 ⁽¹⁾							
b+1...c	Output data for Channel 2 ⁽¹⁾							
c+1...d	Output data for Channel 3 ⁽¹⁾							

- (1) Consumed sizes can be in the range of 0...32. Output data for each channel always begin on a 32-bit boundary, and is enforced by software using the data description for the channel.

Table 14 - Default Data Map for 1734-4IOL - Produced Assembly Instance 102

Message size: 0...132 Bytes

Consumed Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	Channel 0 Status ⁽¹⁾							
2	Channel 1 Status ⁽¹⁾							
4	Channel 2 Status ⁽¹⁾							
6	Channel 3 Status ⁽¹⁾							
8	Channel 0 Most Recent Event							
12	Channel 1 Most Recent Event							
16	Channel 2 Most Recent Event							
20	Channel 3 Most Recent Event							
24...a	Input data from Channel 0 ⁽²⁾							

Table 14 - Default Data Map for 1734-4IOL - Produced Assembly Instance 102 (Continued)

Message size: 0...132 Bytes

Consumed Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
a+1...b	Input data from Channel 1 ⁽²⁾							
b+1...c	Input data from Channel 2 ⁽²⁾							
c+1...d	Input data from Channel 3 ⁽²⁾							

(1) Channel status:

Bit 0: 0 = Roll Up Status, an OR of bits 1...7

Bit 1: 0 = Connection to device, 1 = No Connection to device

Bit 2: 1 = Configuration to device in progress

Bit 3: 1 = Device configuration failed

Bit 4: 1 = IO-Link Key failure

Bit 5: 1 = DO Short Circuit

Bit 6: 1 = Process Data Invalid

Bit 7: 1 = Low Power Fault

Bit 8: 1 = IO-Link output value is forced to limit

Bit 9: 1 = No IO-Link size configured

Bit 10: 0 = Channel configured as Fallback is in the IO-Link operating state, or channel not configured for Fallback;

1 = Channel configured as Fallback is in the DI operating state (This bit is not included in the Roll Up Status).

Bits 11...15: Reserved

(2) Produced sizes can be in the range of 0...32. Input data for each channel always begin on a 32-bit boundary, and is enforced by software using the data description for the channel.

Interpret LED Indicators

See the following diagram and table for information on how to interpret the status indicators.

POINT I/O 4 Channel IO-Link Master Module - 1734-4IOL

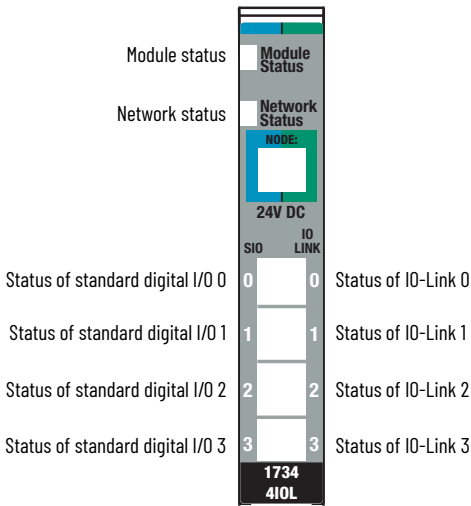


Table 19 - Indicator Status for Modules

Indicator	Status	Description
Module status	Off	No power is applied to the device.
	Green	Device is operating normally.
	Flashing green	Device needs commissioning due to missing, incomplete, or incorrect configuration.
	Flashing red	One of the following conditions exists: - A recoverable fault occurred. - A module firmware update is in progress. - A module firmware update attempt failed.
	Red	An unrecoverable fault occurred. Self-test failure present (checksum failure, or ramtest failure at cycle power). Firmware fatal error present.
	Flashing red/green	Device is self-testing.
Network status	Off	Device is not online: - Device has not completed dup_MAC-id test. - Device not powered - check module status indicator.
	Flashing green	Device is online but has no connections in the established state.
	Green	Device is online and has connections in the established state.
	Flashing red	One or more I/O connections are in timed-out state.
	Red	Critical link failure - failed communication device. Device detected an error that prevents it from communicating on the network.
Channel status	Flashing red/green	Communication faulted device - the device has detected a network access error and is in the communication faulted state. Device has received and accepted an Identity Communication Faulted Request - long protocol message.
	Off	Standard digital input or output is in Off state, configured in IO-Link mode, or no power is applied to the device.
IO-Link status	Yellow	Standard digital input or output is in On state.
	Off	IO-Link is disabled, the channel is configured as standard digital I/O, or no power is applied to the device.
	Flashing green	Port starting up or no IO-Link device is detected.
	Green	IO-Link is active. IO-Link is enabled.