



## POINT I/O

### Purpose of Kit

This kit helps you get familiar with POINT™ I/O. Use this document to install, power-up and load EDS files for your POINT I/O. See the documentation references listed below for additional information, if necessary.

### System Description

The POINT I/O system is a family of modular input/output modules that work over the DeviceNet network. Components mounted on a DIN-rail. POINT I/O modules and removable terminal blocks (RTBs) operate independently. This independence allows simplified installation and commissioning and allows you to specify the right amount of I/O for you application needs.

You must use RSNetworkx™ to identify the network and configure I/O modules using Electronic Data Sheet (EDS) files.

### Additional Information

All POINT I/O documentation can be viewed on the CD accompanying this kit or online at: <http://www.theautomationbookstore.com>. You can also order documentation from the same address.

For more information about the POINT I/O system, including a listing and detailed description of all components, information on installation and product use, see the following publications:

- 1734-2.1 - POINT I/O technical data
- 1734-5.10 - POINT I/O system installation instructions
- 1734-6.5.1 - POINT I/O system user manual

For more information on planning and installing a DeviceNet network, see publication DN-6.7.2

### Tools That You Need

- 1/8" slotted screwdriver

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## Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

The illustrations, charts, sample programs and layout examples shown in this guide are intended solely for purposes of example. Since there are many variables and requirements associated with any particular installation, Allen-Bradley does not assume responsibility or liability (to include intellectual property liability) for actual use based upon the examples shown in this publication.

Allen-Bradley publication SGI-1.1, *Safety Guidelines for the Application, Installation and Maintenance of Solid-State Control* (available from your local Allen-Bradley office), describes some important differences between solid-state equipment and electromechanical devices that should be taken into consideration when applying products such as those described in this publication.

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Throughout this manual we use notes to make you aware of safety considerations:

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**ATTENTION**

Identifies information about practices or circumstances that can lead to personal injury or death, property damage or economic loss

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Attention statements help you to:

- identify a hazard
- avoid a hazard
- recognize the consequences

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**IMPORTANT**

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

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## Using the POINT I/O Starter Kit

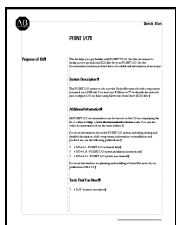
This document covers the following steps:

1. Verify that you have all POINT I/O starter kit components
2. Install the components
3. Wire POINT I/O modules
4. Configure your POINT I/O module
5. Troubleshoot the system

### 1. Verify That You Have All POINT I/O Starter Kit Components

Check the contents of your kit to make sure you have:

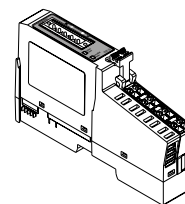
POINT I/O promotional kit quick start



CD with POINT I/O documentation



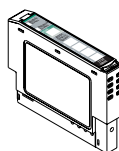
1734-PDN communication interface



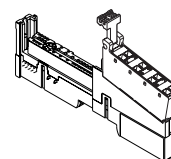
1734-IB2 input module



1734-OB2E output module



1734-MB mounting assembly with 1756-TB removable terminal block (RTB)



If you do not have any of these components, contact your local Rockwell Automation sales representative.

#### **IMPORTANT**

You also need a personal computer with a DeviceNet scanner card and the RSNetWorx for DeviceNet configuration software to use the components shown above.

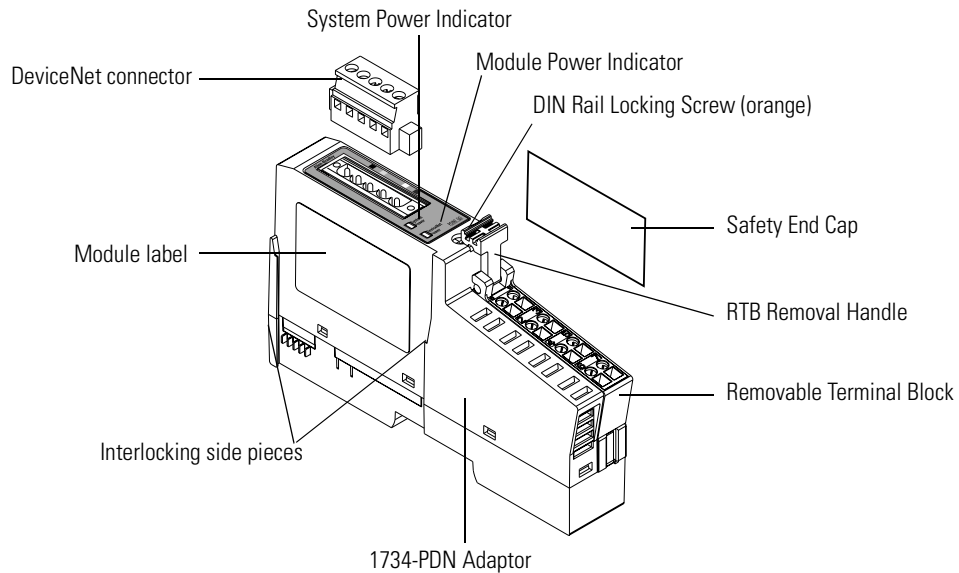
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## 2. Install the Components

You install all POINT I/O components on a DeviceNet network.

### Install the POINT I/O Communication Interface

The 1734-PDN communication interface installs onto a DeviceNet network.



1. Position the interface above the DIN rail.
2. Press down firmly to install the interface on the DIN rail. The locking mechanism locks the interface to the DIN rail.
3. Remove safety end cap. Slide it up to expose backplane and power connections.

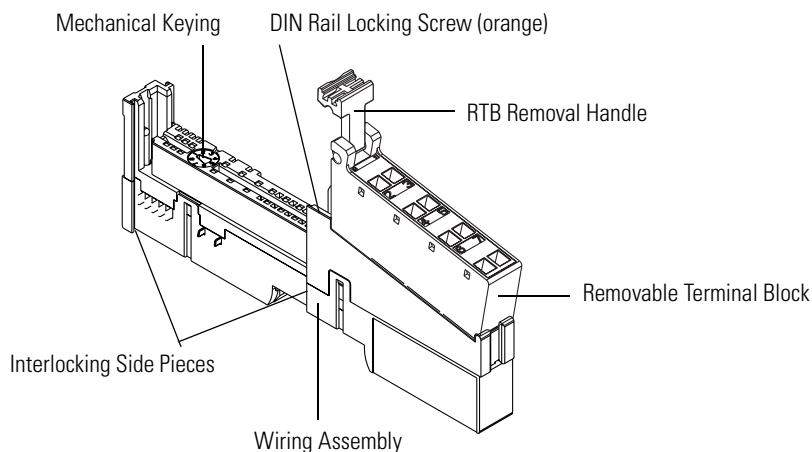
#### ATTENTION



Do not discard end cap. Use end cap to cover exposed connections on the last terminal assembly in the chassis. Failure to do so could result in injury or equipment damage.

## Install the POINT I/O Wiring Assembly

The wiring assembly consists of a mounting assembly (1734-MB) and a removable terminal block of either the screw variety (1734-RTB) or spring variety (1734-RTBS). The wiring assembly is catalog number 1734-TB (screw) or 1734-TBS (spring).

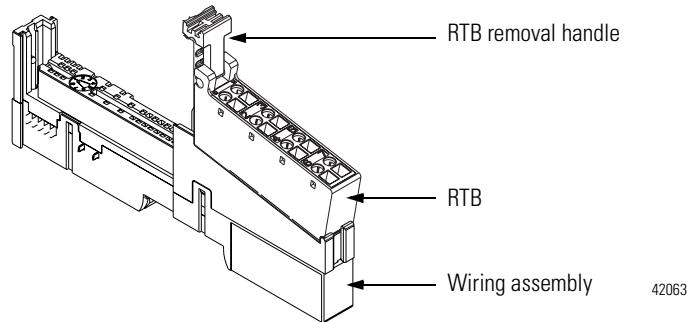


### *Install the Wiring Assembly*

1. Position wiring assembly vertically above installed units (interface, power supply or existing module).
2. Slide the wiring assembly down allowing the interlocking side pieces to engage the adjacent module or interface.
3. Press firmly to seat the wiring assembly on the DIN rail. The wiring assembly snaps into place.

## Install the Removable Terminal Block

A removable terminal block is supplied with your wiring assembly. If necessary, pull up on the RTB removal handle to remove the RTB.



This allows the assembly to be removed and replaced as necessary without removing any of the wiring.

### ATTENTION



Do not pull on the installed wiring to remove a terminal block. A shock hazard exists if power is applied to the terminal block.

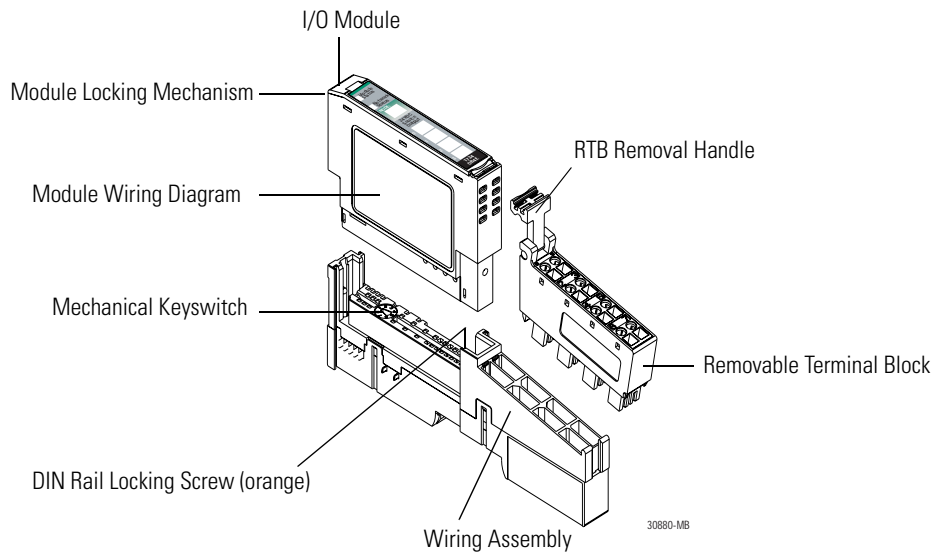
To install the removable terminal block:

1. Insert the end opposite the handle into the assembly unit. This end has a curved section that engages the wiring assembly.
2. Rotate the terminal block into the wiring assembly until it locks itself in place.
3. If an I/O module is installed, snap the RTB handle into place on the module.
4. Insert module straight down into wiring assembly and press to secure. Module locks into place.

## Install the I/O Module

The module can be installed before, or after assembly installation. Before you install the module, make sure:

- wiring assembly is correctly keyed
- wiring assembly locking screw is positioned horizontal according to the assembly.



1. Using a bladed screwdriver, rotate the keyswitch on the wiring assembly clockwise to until the number required for the type of module being installed aligns with the notch in the assembly.
2. Make certain the DIN rail locking screw is in the horizontal position. (You cannot insert the module if the locking mechanism is unlocked.)
3. Insert the module straight down into the wiring assembly and press to secure. The module will lock into place.

### 3. Wire POINT I/O Modules

The RTB connects wiring to the wiring assembly and, consequently, the I/O module.

0	1
2	3
4	5
6	7

Use the table below to make wiring connections to your I/O modules from field devices.

Terminal Number	Module Termination Function	
	1734-IB2	1734-OB2E
0	In 0	Out 0
1	In 1	Out 1
2	NC	Out 0
3	NC	Out 1
4	C	C
5	C	C
6	V	V
7	V	V

V = 24V dc = Supply    C = Common = DC Return    NC = No Connection  
 Chass Gnd=Chassis Ground L1=AC Power L2/N=AC Return/Neutral



## 4. Configure Your POINT I/O Module

You need EDS files to configure your POINT I/O modules. The enclosed CD contains sample EDS files.

In the future, you can download additional EDS files from the following address:

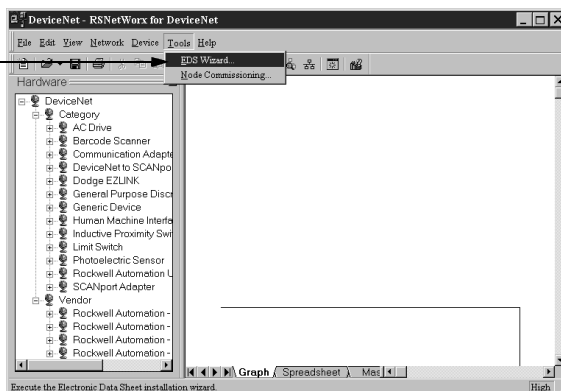
<http://www.ab.com/networks/eds>

### Using RSNetWorx

After downloading the EDS files, you must use RSNetWorx to configure your POINT I/O modules. Start RSNetWorx and use the following steps to complete the configuration process.

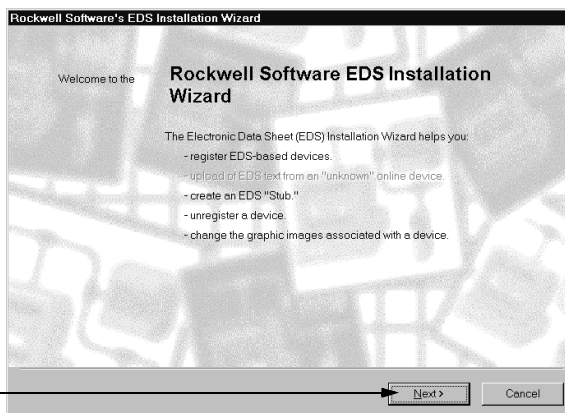
1. Load an EDS file

Click here to begin the EDS wizard



2. Go to a welcome screen.

Click here



3. Register your EDS file. This screen offers multiple choices.

**Options**  
The EDS Installation Wizard provides you with several actions to take.

- Register an EDS file(s).  
This option will add a device(s) to our database.
- Create an EDS Stub.  
This option creates an EDS file with information that describes the file, device and I/O characteristics.
- Unregister a device.  
This option will remove a device that has been registered by an EDS file from our database.
- Change a device's graphic image.  
This option allows you to replace the graphic image (icon file) associated with a device.

1. Click here to register the file.

2. Click here to continue

< Back   Next >   Cancel

4. Choose your EDS file.

**Register Device**  
Electronic Data Sheet file(s) will be added to your system for use in Rockwell Software applications.

- Register an EDS file.
- Register a directory of EDS files.  Include files in the subdirectory.
- Download EDS file from the internet.

Enter the complete path of the EDS file to be installed and registered.

d:\POINT\_IO\0001007300180100.eds

Choose File...

\* If there is an icon file (.ico) with the same name as the file(s) you are registering then this image will be associated with the device.

Press the 'NEXT' button to perform an installation test on the file(s).

1. Click here to register a single file or a directory of files.

2. Click here to choose a single file or a directory of files.

3. Click here to continue

< Back   Next >   Cancel

5. Check the file for errors, if necessary.

**EDS File Installation Test Results**  
This displays the result of an installation test. The installation test evaluates each EDS file for syntax errors and if the information given in the 'File' and 'Device' section is valid.

Installation Test Results

- d:\point\_io\0001007300180100.eds

View file...

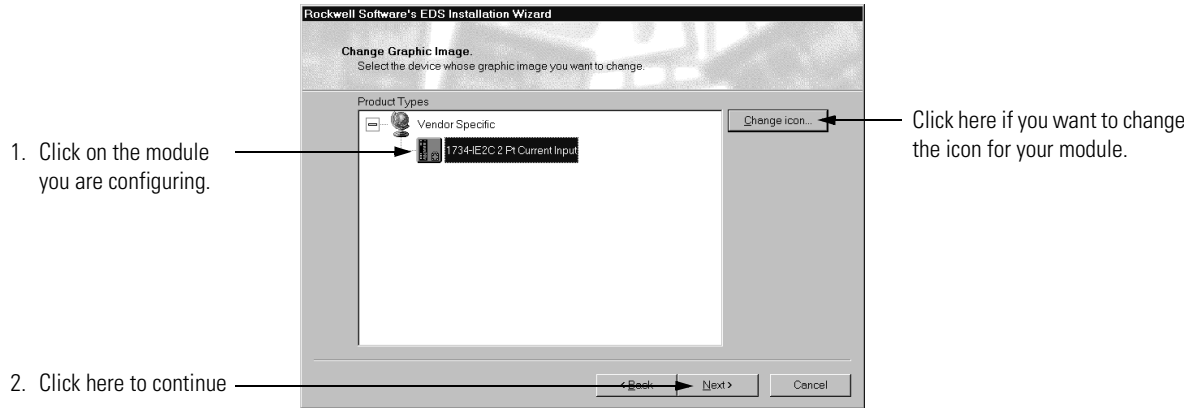
Press the 'Next' button to assign a graphic image to the device.

1. Click here to check the file for errors, if necessary.

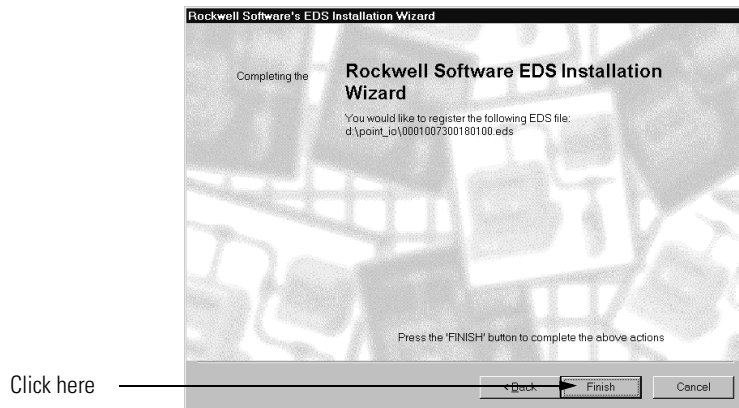
2. Click here to continue

< Back   Next >   Cancel

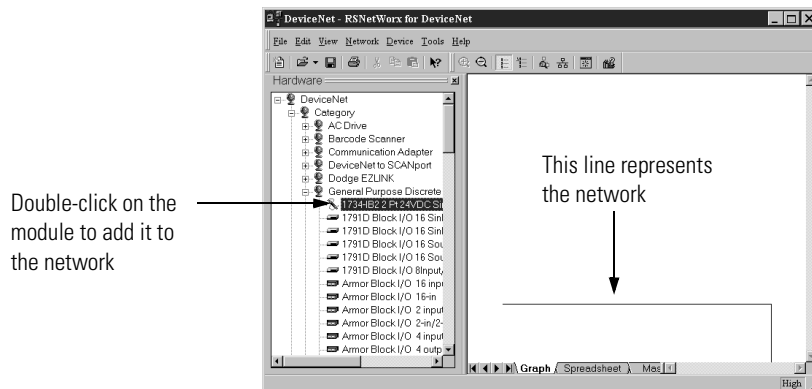
6. Choose an icon for your module. RSNetWorx provides a default icon.



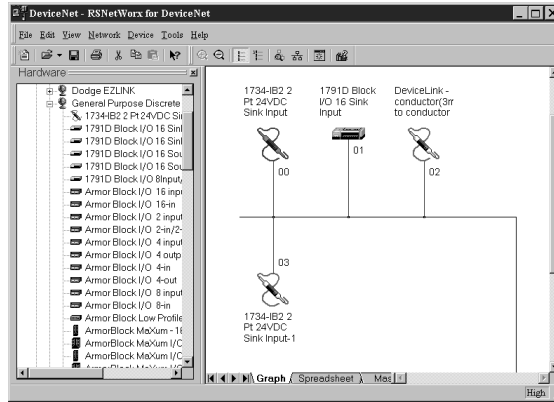
7. Finish the EDS installation process.



The module you configured appears in the Hardware listing.



The screen below shows a sample DeviceNet network with POINT I/O modules.



### Monitoring Configuration Parameters

The following configuration screen appears when you double-click on a 1734-IB2.

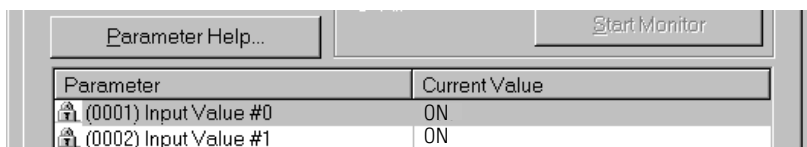
The screenshot shows the configuration dialog box for a 1734-IB2 2 Point 24VDC Sink Input. The 'On-Line' tab is active, and the 'All parameters' group is selected. The dialog includes buttons for 'Restore Default Values', 'Parameter Help', 'Upload From Device', 'Download To Device', and 'Start Monitor'. Below these is a table of parameters and their current values.

Parameter	Current Value
(0001) Input Value #0	OFF
(0002) Input Value #1	OFF
(0003) On-to-On Filter 0	1000 us
(0004) On-to-On Filter 1	1000 us
(0005) On-to-Off Filter 0	1000 us
(0006) On-to-Off Filter 1	1000 us
(0007) Autobaud	Enable
(0008) Node Address Request	Do Nothing
(0009) Set QuickConnect	Disable
(0010) AutoAddress Neighbor	Do Nothing
(0011) Set Baud Rate	125 kHz
(0012) Set Disable AutoBaud	Disable

## Change in Device Parameters

Follow these steps to see a change in device parameters.

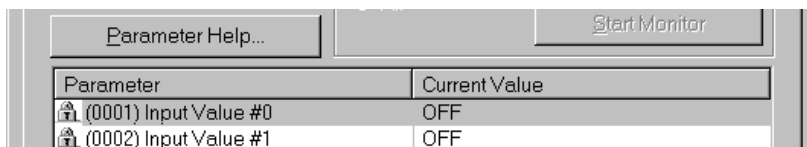
1. Install your 1734-IB2 and 1734-OB2E modules onto a DeviceNet network.
2. Wire the modules.
3. Download EDS files to configure both modules.
4. Monitor the 1734-IB2 module's configuration, as shown on page 12. The device parameter field **(0001) Input Value #0** lists a value of ON when the 1734-IB2 module is wired as shown below.



The screenshot shows a software interface with a table of parameters. At the top, there are two buttons: 'Parameter Help...' on the left and 'Start Monitor' on the right. Below these is a table with two columns: 'Parameter' and 'Current Value'. The table contains two rows of data.

Parameter	Current Value
(0001) Input Value #0	ON
(0002) Input Value #1	ON

5. Disconnect the wire from terminal 0. The device parameter field **(0001) Input Value #0** changes to OFF as shown below.



The screenshot shows the same software interface as above, but the 'Current Value' for both parameters has changed to OFF.

Parameter	Current Value
(0001) Input Value #0	OFF
(0002) Input Value #1	OFF

## Additional Information - Field Potential Distributor

Although you did not receive a field potential distributor (1734-FPD) with the POINT I/O promotional kit, you should be aware of when and how to use it.

The 1734-FPD field power distributor allows you to convert your field power so that you may have a broad range of voltage inputs in your 12 module system. This range of voltage inputs includes 5V dc to 250V dc and/or 24V ac to 240V ac applications and I/O modules.

The 1734-FPD field power distributor passes through all POINT I/O backplane signals, but does not provide additional backplane power. The field power distributor gives you the ability to change the field power distribution source for I/O modules to the right of the 1734-FPD field power distributor. This facilitates logical or functional partitioning of low-channel count, high I/O-mix applications using the 1734-PDN and POINTBlock I/O communication interfaces.

You can mount the field potential distributor onto a DeviceNet network using the same installation steps as described for the 1734-PDN on page 4. Once mounted, the 1734-FPD field potential distributor connects to I/O modules to begin new voltage distribution.

## Additional Information - Remove POINT I/O Components

You can easily remove a POINT I/O module, RTB or wiring assembly, if necessary.

### *Remove the I/O Module*

1. Make sure the RTB is unlatched from the module. The RTB removal handle locks the RTB onto the module.
2. In successive motions, push in tab on top of the module and pull the module off the DIN rail.

### *Remove the RTB*

1. Hold the RTB removal handle.
2. Pull the RTB off the wiring assembly.

### Remove the Wiring Assembly

1. Remove the module.
2. Use a small bladed screwdriver to rotate the assembly locking screw to a vertical position. This releases the locking mechanism.
3. Pull the wiring assembly off the DIN rail.

## 5. Troubleshoot the System

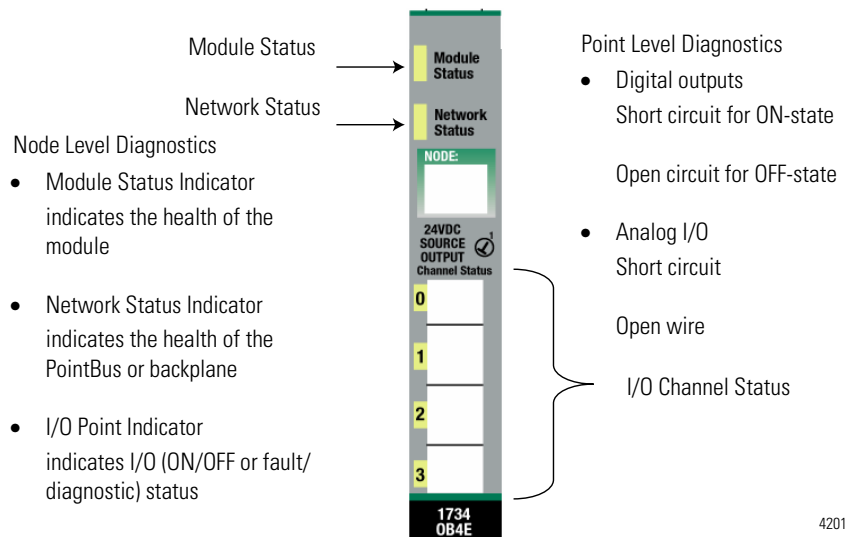
POINT I/O modules provide a variety of LED indicators:

- module status
- network status
- power indication
- calibration status
- I/O point status (ON/OFF/fault or diagnostic)

Refer to each module’s individual indicators later in this document for detailed information.

### About the POINT I/O Modules’ Diagnostics

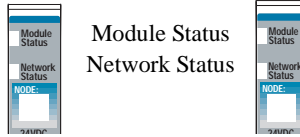
All status and diagnostic information (strobed, polled, cyclic, or change-of-state) is reported back over the network communication adapter. A single point of failure is detected and reported at the module and to the control system.



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## Troubleshoot the Digital Modules

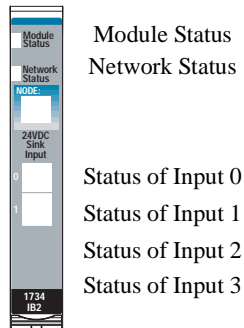
The network and module status indications are the same for all modules. These indications are indicated below.



Indication	Probable Cause
<b>Module Status</b>	
Off	No power applied to device
Green	Device operating normally
Flashing Green	Device needs commissioning due to configuration missing, incomplete or incorrect.
Flashing Red	Recoverable fault.
Red	Unrecoverable fault may require device replacement
Flashing Red/Green	Device is in self-test
<b>Network Status</b>	
Off	Device is not on-line - Device has not completed dup_MAC_id test. - Device not powered - check module status indicator
Flashing Green	Device is on-line but has no connections in the established state.
Green	Device on-line and has connections in the established state.
Flashing Red	One or more I/O connections in timed-out state
Red	Critical link failure - failed communication device. Device detected error that prevents it communicating on the network.
Flashing Red/Green	Communication faulted device - the device has detected a network access error and is in communication faulted state. Device has received and accepted an Identify Communication Faulted Request - long protocol message.

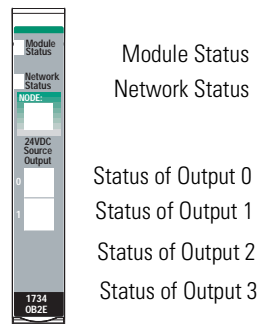


### 1734-IB2 Sink Input Modules



Indication	Probable Cause
<b>I/O Status</b>	
Off	Inputs in the off-state
Yellow	Input is in the on-state

### 1734-OB2E Output Module



Indication	Probable Cause
<b>I/O Status</b>	
Off	All outputs inactive
Yellow	One or more output is active and under control
Flashing Red	Open circuit detected. No load. (Off-State only)
Red	Short circuit detected. No load (On-State only)

## European Communities (EC) Directive Compliance

If this product has the CE mark it is approved for installation within the European Union and EEA regions. It has been designed and tested to meet the following directives.

### EMC Directive

This product is tested to meet the Council Directive 89/336/EC Electromagnetic Compatibility (EMC) by applying the following standards, in whole or in part, documented in a technical construction file:

- EN 50081-2 EMC — Generic Emission Standard, Part 2 — Industrial Environment
- EN 50082-2 EMC — Generic Immunity Standard, Part 2 — Industrial Environment

This product is intended for use in an industrial environment.

### Low Voltage Directive

This product is tested to meet Council Directive 73/23/EEC Low Voltage, by applying the safety requirements of EN 61131-2 Programmable Controllers, Part 2 - Equipment Requirements and Tests. For specific information required by EN 61131-2, see the appropriate sections in this publication, as well as the Allen-Bradley publication Industrial Automation Wiring and Grounding Guidelines For Noise Immunity, publication 1770-4.1.

This equipment is classified as open equipment and must be mounted in an enclosure during operation to provide safety protection.

**Notes:**

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