

# *Installation Instructions*

## **Foundation Fieldbus Linking Device**

Catalog Numbers 1757-FFLD2, 1757-FFLD4

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### **About the Fieldbus Linking Device**

The FOUNDATION Fieldbus Linking Device bridges from the Ethernet network to H1 networks. It accepts either High-speed Ethernet (HSE) or EtherNet/IP messages and converts them to the H1 protocol. By supporting H1, HSE, and EtherNet/IP protocols, the linking device is capable of providing bridging capability of Rockwell Automation products and FOUNDATION Fieldbus products on the Ethernet network to products on H1 links.

### 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://www.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.

<b>WARNING</b> 	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.
<b>IMPORTANT</b>	Identifies information that is critical for successful application and understanding of the product.
<b>ATTENTION</b> 	Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you identify a hazard, avoid a hazard and recognize the consequences.
<b>SHOCK HAZARD</b> 	Labels may be on or inside the equipment, for example, drive or motor, to alert people that dangerous voltage may be present.
<b>BURN HAZARD</b> 	Labels may be on or inside the equipment, for example, drive or motor, to alert people that surfaces may reach dangerous temperatures.

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## Environment and Enclosure

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**ATTENTION**

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC 60664-1), at altitudes up to 2000 m (6562 ft) without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR 11. Without appropriate precautions, there may be difficulties with electromagnetic compatibility in residential and other environments due to conducted and radiated disturbances.

This equipment is supplied as open-type equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The enclosure must have suitable flame-retardant properties to prevent or minimize the spread of flame, complying with a flame spread rating of 5VA, V2, V1, V0 (or equivalent) if non-metallic. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

In addition to this publication, see:

- Industrial Automation Wiring and Grounding Guidelines, for additional installation requirements, Allen-Bradley publication [1770-4.1](#).
- NEMA Standards 250 and IEC 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure.

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**ATTENTION**

To comply with the CE Low Voltage Directive (LVD), all connections to this equipment must be powered from a source compliant with safety extra low voltage (SELV) or protected extra low voltage (PELV).

To comply with UL restrictions, all connections to this equipment must be powered from a source compliant with Class 2 or limited voltage/current.

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## North American Hazardous Location Approval

<p><b>The following information applies when operating this equipment in hazardous locations.</b></p>	<p><b>Informations sur l'utilisation de cet équipement en environnements dangereux.</b></p>
<p>Products marked "CL I, DIV2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.</p>	<p>Les produits marqués "CL I, DIV 2, GP A, B, C, D" ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.</p>
<p><b>WARNING</b></p> 	<p><b>EXPLOSION HAZARD -</b></p> <ul style="list-style-type: none"> <li>• Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.</li> <li>• Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.</li> <li>• Substitution of components may impair suitability for Class I, Division 2.</li> <li>• If this product contains batteries, they must only be changed in an area known to be nonhazardous.</li> </ul>
<p><b>AVERTISSEMENT</b></p> 	<p><b>RISQUE D'EXPLOSION –</b></p> <ul style="list-style-type: none"> <li>• Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement.</li> <li>• Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit.</li> <li>• La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2.</li> <li>• S'assurer que l'environnement est classé non dangereux avant de changer les piles.</li> </ul>

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## European Hazardous Location Approval

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### European Zone 2 Certification (The following applies when the product bears the Ex or EEx marking.)

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This equipment is intended for use in potentially explosive atmospheres as defined by European Union Directive 94/9/EC. Intertek certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of Category 3 equipment intended for use in potentially explosive atmospheres, given in Annex II to this Directive. The examination and test results are recorded in confidential report 3172640DAL. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-15 and EN 60079-0.

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**WARNING**

- This equipment must be installed in an enclosure providing at least IP54 protection when applied in Zone 2 environments.
  - This equipment is not resistant to sunlight or other sources of UV radiation.
  - This equipment shall be used within its specified ratings defined by Allen-Bradley.
  - Provision shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 40% when applied in Zone 2 environments.
  - Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product.
  - Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous.
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## Preventing Electrostatic Discharge

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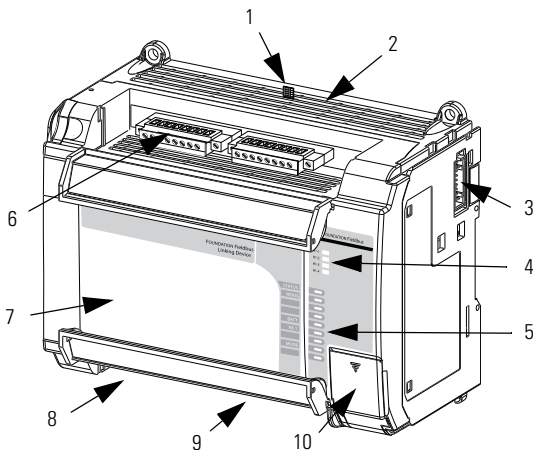
**ATTENTION**

This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:

- Touch a grounded object to discharge potential static.
  - Wear an approved grounding wriststrap.
  - Do not touch connectors or pins on component boards.
  - Do not touch circuit components inside the equipment.
  - Use a static-safe workstation, if available.
  - Store the equipment in appropriate static-safe packaging when not in use.
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## Parts Illustration of the Fieldbus Linking Device

The sample illustration shows the parts that comprise the 1757-FFLD linking device, which links Rockwell Automation products and FOUNDATION Fieldbus products on the Ethernet network to products on H1 links.



31989-M

Feature	Description
1	Reset configuration jumper
2	Factory-default reset button (inside top cover)
3	Interface to expansion I/O, removable ESD sticker
4	H1 status indicators
5	Status indicators
6	Fieldbus H1 interface terminals
7	Filler module
8	Power supply connection (not shown)
9	Ethernet port (not shown)
10	Serial port (not used)

## Before You Begin

The following software is compatible with this revision of the linking device:

- RSFieldbus software, version 2.03 or later
- RSLogix 5000 programming software, version 16.03 or later
- RSLinx Classic software, version 2.52 or later
- Logix5000 Clock Update tool

## Install the Linking Device

Install your linking device by using the instructions on the following pages.

## Mount the Linking Device

Most applications require installation in an industrial enclosure (Pollution Degree 2) to reduce the effects of electrical interference (Over Voltage Category II) and environmental exposure. Locate your linking device as far as possible from power lines, load lines, and other sources of electrical noise such as hard-contact switches, relays, and AC motor drives. For more information on proper grounding guidelines, see the Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

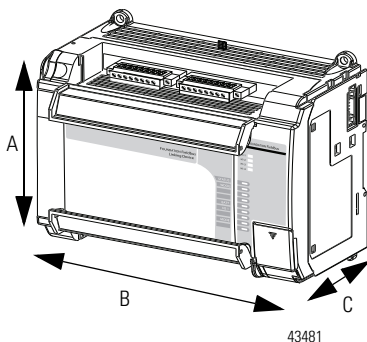
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**ATTENTION**

- We do not recommend vertical mounting due to heat build-up considerations.
  - Be careful of metal chips when drilling mounting holes for your linking device or other equipment within the enclosure or panel. Drilled fragments that fall into the unit could cause damage.
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### Product Dimensions

Dimension	Measurement
Height (A)	138 mm (5.43 in.)
Width (B)	168 mm (6.62 in.)
Depth (C)	87 mm (3.43 in.)



### Mount on a DIN Rail

The linking device DIN-rail latch locks in the open position so that the linking device can be easily attached to or removed from the DIN rail. The maximum extension of the latch is 15 mm (0.67 in.) in the open position. You need a screwdriver to remove the linking device. The linking device can be mounted to 35 x 7.5 or 35 x 15 DIN rails (EN 50 022). See [page 10](#) for DIN-rail mounting dimensions.

#### ATTENTION



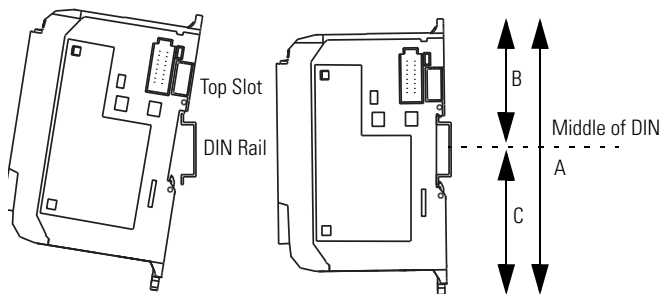
This product is grounded through the DIN rail to chassis ground. Use zinc plated yellow-chromate steel DIN rail to assure proper grounding. The use of other DIN rail materials (for example, aluminum or plastic) that can corrode, oxidize, or are poor conductors can result in improper or intermittent grounding. Secure DIN rail to the mounting surface approximately every 200 mm (7.8 in.) and use end-anchors appropriately.

Do these steps to install your linking device on the DIN rail.

1. Verify that the placement of the linking device on the DIN rail allows for 50 mm (2 in.) of space on all sides for adequate ventilation.
2. Hook the top slot over the DIN rail.



3. While pressing the linking device down against the top of the rail, snap the bottom of the linking device into position.



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Dimension	Height
A	138 mm (5.43 in.)
B	69 mm (2.715 in.)
C	69 mm (2.715 in.) DIN latch closed, 76.1 mm (3 in.) DIN latch open

### *Mount on a Panel*

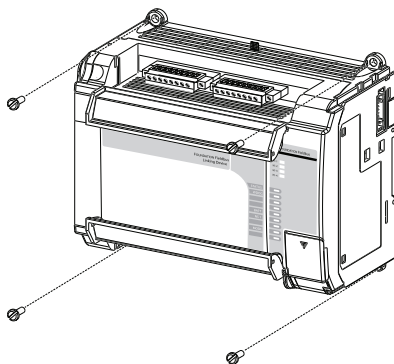
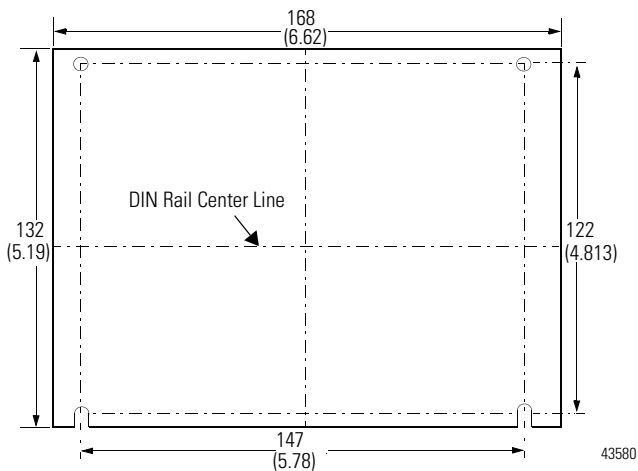
Follow these steps to install your linking device on a panel.

1. Verify that the placement of the linking device allows for 50 mm (2 in.) of space on all sides for adequate ventilation.

## 10 Foundation Fieldbus Linking Device

2. Use the following figures to mount the linking device to a panel by using #8 or M4 screws tightened to 1.1...1.8 N•m (10...16 lb•in).

All dimensions are in mm (in.).



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## Wire the Linking Device

Wire your linking device by using these instructions.

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**WARNING**

- 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.
  - When you change switch settings while 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.
- 

## Wire Requirements

The FOUNDATION Fieldbus recommendation for the cable connecting fieldbus devices is 0.8 mm<sup>2</sup> (18 AWG) shielded, twisted-pair wire. It is important to calculate how the planned topology for your fieldbus segment, selected wiring, supplied power, and intended mix of fieldbus devices may impact the overall performance of a fieldbus network.

For further details, see:

- the FOUNDATION Fieldbus specifications at <http://www.fieldbus.org>, publication [AG-140](#)
- the Fieldbus Solutions for Rockwell Automation's Integrated Architecture User Manual, publication [1757-UM006](#), for a condensed overview of fieldbus wiring considerations.

### *Ethernet Connection*

**WARNING**

If you connect or disconnect the communication 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

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Connect your Ethernet cable to the Ethernet port on the underside of the linking device. The factory default for the linking device is Dynamic Host Configuration Protocol (DHCP) for initial configuration.

### *H1 Terminal Block*

**WARNING**

When you connect or disconnect the removable terminal block (RTB) with field-side power applied, 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.

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**ATTENTION**

Be careful when stripping wires. Wire fragments that fall into the linking device could cause damage.

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**IMPORTANT**

The H1 terminal plugs are keyed so they fit only into the corresponding socket. Be certain that you are connecting the cables to the correct plugs.

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The linking device provides two parallel terminals on each H1 network. Use one to connect to your fieldbus devices and use the other for short-term connection of diagnostic devices.

Perform the following steps to connect the H1 cables.

1. Strip about 5...7 mm (0.2...0.28 in.) of the insulation at the ends of the cable leads.
2. Insert the stripped cable end into the RTB, following the layout on [page 13](#), and tighten the screw.

- Complete [step 1](#) and [step 2](#) for all H1 cables.
- Insert the RTB into the corresponding socket.

### H1 Terminal Block Layout (catalog number 1757-FFLD4 shown)

	○ ○ ○ ○	○ ○ ○ ○		○ ○ ○ ○	○ ○ ○ ○	
	+ - + -	+ - + -		+ - + -	+ - + -	
	H1-1	H1-2		H1-3	H1-4	

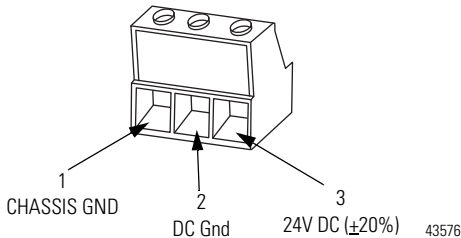
### Power and Grounding

#### IMPORTANT

You must use a power conditioner between your fieldbus power supply and the devices on the fieldbus network. For more information, see the FOUNDATION Fieldbus specifications at <http://www.fieldbus.org>, publication [AG-140](#)

Do not exceed 10 m (32.8 ft) total wiring length on the 24V DC power connection.

- Connect the chassis ground to connector 1 - CHASSIS GND.
- Connect the 24V common to connector 2 - DC GND.
- Connect the +24V DC input power to connector 3 - 24V DC ( $\pm 20\%$ ).



- Apply power to the linking device.

### Configure the Linking Device

The following instructions describe how to configure and set up network parameters for your linking device.

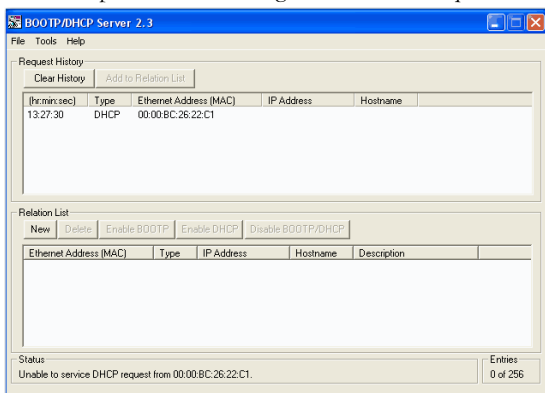
#### *Assign an IP Address*

The Rockwell Automation BOOTP/DHCP Server (BOOTP) is a standalone program that combines the functionality of standard BOOTP software with DHCP software. The linking device is shipped with DHCP enabled.

To configure the linking device by using BOOTP, perform the following steps.

1. Choose Start > Programs > Rockwell Software > BOOTP-DHCP Server 2.3.2 Standalone > BOOTP-DHCP Server 2.3.2 Standalone.

BOOTP opens and the linking device sends a request.



2. Verify that the linking device is the correct device by matching the MAC address with the MAC address found on the label of the linking device (under the barcode).

3. Double-click the request.

A New Entry dialog box opens.

New Entry

Ethernet Address (MAC): 00:00:BC:26:22:C1

IP Address: 0 . 0 . 0 . 0

Hostname:

Description:

OK Cancel

4. Type the IP address for the linking device.

New Entry

Ethernet Address (MAC): 00:00:BC:26:22:C1

IP Address: 192 . 168 . 1 . 67

Hostname:

Description:

OK Cancel

5. Click OK.

The device is added to the Relation List at the bottom of the BOOTP/DHCP Server window.

Relation List

New Delete Enable BOOTP Enable DHCP Disable BOOTP/DHCP

Ethernet Address (MAC)	Type	IP Address	Hostname	Description
00:00:BC:26:22:C1	DHCP	192.168.1.67		

Status  
Sent 192.168.1.67 to Ethernet address 00:00:BC:26:22:C1

Entries  
1 of 256

6. To permanently assign this configuration to the linking device, select the device and click Disable BOOTP/DHCP.

When you cycle power to the linking device, it uses the configuration you assigned and does not issue a DHCP request.

7. To enable DHCP for the linking device, select the device and click Enable DHCP.

### *Save the Relation List*

You can save the Relation List for later use. Do these steps to save the Relation List.

1. From the File menu, choose Save As.

The Save dialog box opens.

2. Choose the location to save in.
3. Type a File name for the Relation List (for example, 'Control System Configuration') and click Save.

### **Install the EDS File**

The EDS file can be uploaded directly from the linking device. This feature lets you register the EDS file for your device from within RSLinx software by following the steps listed below.

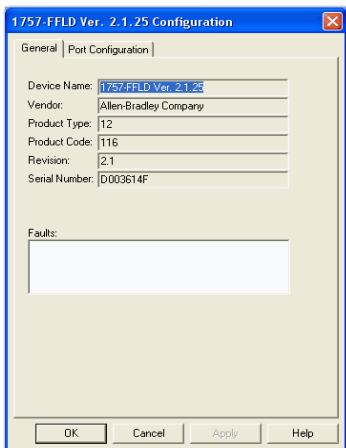
1. Open RSLinx software, and browse for the linking device.
2. Right-click the linking device and choose Upload EDS file from the device.
3. Complete the EDS wizard to register the EDS file.

The EDS file can also be downloaded from <http://www.ab.com/networks/eds.html> and installed with the RSLinx EDS Hardware Installation tool.

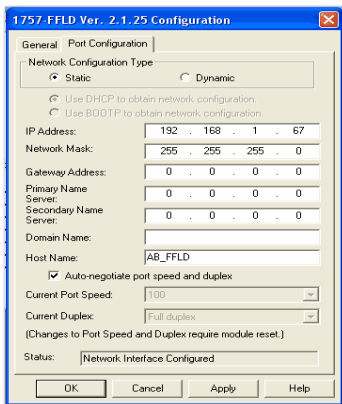


### Set the Linking Device's Network Parameters

1. Open RSLinx software and click the RSWho icon.
2. Browse to the linking device under the Ethernet/IP driver.
3. Right-click the linking device and choose Module Configuration to set network parameters.



- Click the Port Configuration tab to view or change parameters.



- When you finish making changes, click Apply and then OK.

## Troubleshoot the Linking Device

The following instructions describe how to maintain your linking device.

### Reset the Linking Device

You can reset the linking device with the:

- reset jumper (locally).
- reset button (locally).
- web page (remotely).

To use the reset jumper or reset button, follow the procedures below. To use the web page, refer to the FOUNDATION Fieldbus Linking Device User Manual, publication [1757-UM010](#).

You can reset the linking device to the following defaults:

- Reset Configuration
- Factory

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## Reset Configuration

The Reset Configuration removes power from the battery, clearing all downloaded fieldbus configurations. The linking device retains its network configuration and web page password information through this reset.

Do these steps to reset configuration.

1. Remove power from the linking device.

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**WARNING**

If you insert or remove the jumper while the power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure the area is nonhazardous before proceeding.

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2. Move the jumper from its original position (two right pins) to the two left pins.
3. Wait 5 seconds.
4. Move the jumper back to its original position.
5. Return power to the linking device.

## Reset to Factory Default

The factory-default reset sets the linking device's network configuration to use BOOTP, erases web page password information, and clears all downloaded fieldbus configurations. Follow these steps to complete a factory-default reset.

1. Verify that the linking device is powered up and in a running state (H1 status indicators are blinking).
2. Press the reset button.

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**WARNING**

When you press the reset button while 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.

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## Status Indicators

### Linking Device Status Indicators

Indicator	Status	Description
H1	Off	The linking device H1 channel is inactive. Verify that the linking device is connected to the H1 network.
	Flashing green	The linking device H1 channel is active.
STATUS (module)	Off	No power - Module does not have 24V DC power. Verify that power is supplied to the module.
	Flashing green	Standby - Module not configured. <sup>(1)</sup>
	Green	Operational - Module operating correctly.
	Flashing red	Minor fault - A recoverable fault has been detected. Verify that the configuration is correct and consistent.
	Red	Major fault - An unrecoverable fault has been detected. Recycle power to the module. If this does not clear the fault, replace the module.
WDOG (watchdog)	Off	Normal operation.
	Flashing red	Software fault. Contact Rockwell Automation Technical Support.
BATT (battery)	Off	Normal operation.
	Flashing red	Jumper is missing (or not seated on the two rightmost pins), or the battery is low or dead. <sup>(2)</sup>
NS (network status)	Off	Not powered, no IP address. Verify that power is supplied or assign an IP address.
	Flashing green	No connections. <sup>(1)</sup> Verify that the linking device is connected to the fieldbus network.
	Green	CIP connections.
	Flashing red	Connection timeout. Verify that the linking device is connected to the Ethernet network.
	Flashing red and green	Self test.

## Linking Device Status Indicators

Indicator	Status	Description
MODE	Solid green	Linking device operational.
	Flashing green	Linking device out-of-service. Verify that the Resource Block is set to Target Auto mode.

- (1) If you already set the IP address and the Status and Mode indicators are flashing green, you may have a duplicate IP address with another device on your network.
- (2) If the BATT status indicator remains on after the jumper is replaced, and power has been returned to the linking device, contact Rockwell Automation Technical Support.

## Specifications

### 1757-FFLD2, 1757-FFLD4 - Technical Specifications

Attribute	Value
Physical interfaces	2 or 4 H1 FOUNDATION Fieldbus interfaces 1 10/100 Ethernet interface (HSE, IP)
Number of H1 networks <sup>(1)</sup> per linking device	2 for 1757-FFLD2 linking device, 4 for 1757-FFLD4 linking device
Number of fieldbus devices per H1 network, max	16 (8...10 recommended)
Number of fieldbus devices per linking device, max	64
Power requirements	
Current rating/supply power In rush current	300 mA @ 24V DC ( $\pm 20\%$ ) 1.5 A
Isolation voltage	50V (continuous), Basic Insulation Type, Fieldbus to system backplane and Ethernet network to system backplane  Type tested at 500V AC for 60 s
Panel mounting screw torque (using M4 or #8 screws)	1.1...1.8 N•m (10...16 lb•in)

**1757-FFLD2, 1757-FFLD4 - Technical Specifications**

<b>Attribute</b>	<b>Value</b>
Wiring category <sup>(2)</sup>	2 - on Fieldbus ports 3 - on power ports 2 - on Ethernet ports
Terminal block torque specifications	0.34 N•m (3 lb•in) on power and Fieldbus wire connections
Wire size	
DC power connection	0.2... 1.5 mm <sup>2</sup> (26...16 AWG) solid or stranded copper wire rated at 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max
Fieldbus connections	0.8 mm <sup>2</sup> (18 AWG) solid or stranded shielded twisted pair copper wire rated at 75 °C (167 °F) or greater 1.2 mm (3/64 in.) insulation max
Ethernet connections	RJ45 connector according to IEC 60603-7, 2 or 4 pair Category 5e minimum cable according to TIA 568-B.1 or Category 5 cable according to ISO/IEC 24702
Program retention (unpowered)	21 days
North American temp code	T4
IEC temp code	T4
In-circuit battery life	5000 charge/discharge cycles (about 13 years). Battery is not replaceable
Enclosure type rating	None (open-style)

<sup>(1)</sup> Each network defined as a FOUNDATION Fieldbus 31.25 kbps H1 network.

<sup>(2)</sup> Use this Conductor Category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication [1770-4.1](#).

**1757-FFLD2, 1757-FFLD4 - Environmental Specifications**

<b>Attribute</b>	<b>Value</b>
Operating temperature IEC 60068-2-1 (Test Ad, Operating Cold) IEC 60068-2-2 (Test Bd, Operating Dry Heat) IEC 60068-2-14 (Test Nb, Operating Thermal Shock)	0...60 °C (32...140 °F)
Nonoperating temperature IEC 60068-2-1 (Test Ab, Unpackaged Nonoperating Cold) IEC 60068-2-2 (Test Bb, Unpackaged Nonoperating Dry Heat) IEC 60068-2-14 (Test Na, Unpackaged Thermal Shock)	-40...85 °C (-40...185 °F)
Relative humidity IEC 60068-2-30 (Test Db, Unpackaged Damp Heat)	5...95% noncondensing
Vibration IEC 60068-2-6 (Test Fc, Operating)	5 g @ 10...500 Hz
Operating shock IEC 60068-2-27 (Test Ea, Unpackaged Shock)	15 g
Nonoperating shock IEC 60068-2-27 (Test Ea, Unpackaged Shock)	30 g
Emissions CISPR 11	Group 1, Class A
ESD immunity IEC 61000-4-2	6 kV contact discharges 8 kV air discharges

**1757-FFLD2, 1757-FFLD4 - Environmental Specifications**

<b>Attribute</b>	<b>Value</b>
Radiated RF immunity IEC 61000-4-3	1V/m with 1 kHz sine-wave 80% AM from 2000...2700 MHz  10V/m with 1 kHz sine-wave 80% AM from 80...2000 MHz  10V/m with 200 Hz 50% Pulse 100% AM at 900 MHz and 1890 MHz
EFT/B immunity IEC 61000-4-4	±2 kV at 5 kHz on power ports  ±2 kV at 5 kHz on shielded Fieldbus ports  ±2 kV at 5 kHz on Ethernet ports
Surge transient immunity IEC 61000-4-5	±2 kV line-earth (CM) on shielded Fieldbus ports  ±2 kV line-earth (CM) on shielded Ethernet ports
Conducted RF immunity IEC 61000-4-6	10V rms with 1 kHz sine-wave 80% AM from 150 kHz...80 MHz on power ports, shielded Fieldbus ports, and Ethernet ports
Magnetic field immunity IEC 61000-4-8	30 A/m long duration at 50 Hz

**1757-FFLD2, 1757-FFLD4 - Certifications<sup>(1)</sup>**

<b>Certification<sup>(2)</sup></b>	<b>Value</b>
c-UL-us	UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada. See UL File E194810.



**1757-FFLD2, 1757-FFLD4 - Certifications<sup>(1)</sup>**

<b>Certification <sup>(2)</sup></b>	<b>Value</b>
CE	European Union 2004/108/EC EMC Directive, compliant with: <ul style="list-style-type: none"> <li>• EN 61326-1; Meas./Control/Lab., Industrial Requirements</li> <li>• EN 61000-6-2; Industrial Immunity</li> <li>• EN 61000-6-4; Industrial Emissions</li> <li>• EN 61131-2; Programmable Controllers (Clause 8, Zone A &amp; B)</li> </ul>
C-Tick	Australian Radiocommunications Act, compliant with: <ul style="list-style-type: none"> <li>• AS/NZS CISPR 11; Industrial Emissions</li> </ul>
Ex	European Union 94/9/EC ATEX Directive, compliant with: <ul style="list-style-type: none"> <li>• EN 60079-15; Potentially Explosive Atmospheres, Protection "n"</li> <li>• EN 60079-0; General Requirements</li> <li>• II 3 G Ex nA nL IIC</li> </ul>
EtherNet/IP	ODVA conformance tested to EtherNet/IP specifications
FF	FOUNDATION Fieldbus Test Campaigns H1-CT0060, HTK-000900

<sup>(1)</sup> When product is marked.

<sup>(2)</sup> See the Product Certification link at <http://www.ab.com> for Declarations of Conformity, Certificates, and other certification details.

## Additional Resources

These documents contain additional information concerning related Rockwell Automation products.

Resource	Description
FOUNDATION Fieldbus Wiring and Installation Application Guide publication at <a href="http://www.fieldbus.org">http://www.fieldbus.org</a> . publication <a href="#">AG-140</a>	Provides information on how to wire, power, and configure network components.
FOUNDATION Fieldbus Intrinsic Safe Systems Application Guide at <a href="http://www.fieldbus.org">http://www.fieldbus.org</a> . publication <a href="#">AG-163</a>	Introduces you to the principals of intrinsic safety, and outlines how to apply approved devices in a hazardous area.
FOUNDATION Fieldbus Linking Device User Manual, publication <a href="#">1757-UM010</a>	Provides information needed to use the linking device, including function block and web page details.
Fieldbus Solutions for Rockwell Automation's Integrated Architecture User Manual, publication <a href="#">1757-UM006</a>	Overview of intergrating fieldbus into ProcessLogix, ControlLogix, and PLC-5 controllers.

## **Notes:**

## Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At <http://www.support.rockwellautomation.com> you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration, and troubleshooting, we offer TechConnect support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://www.support.rockwellautomation.com>.

## Installation Assistance

If you experience a problem within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your product up and running.

United States	1.440.646.3434 Monday – Friday, 8 a.m. – 5 p.m. EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

## New Product Satisfaction Return

Rockwell Automation tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

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

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[www.rockwellautomation.com](http://www.rockwellautomation.com)

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Publication 1757-IN021E-EN-P - August 2009

PN-45236

Supersedes Publication 1757-IN021D-EN-P - October 2005

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