Installation Instructions

USB-to-ControlNet Cable

Catalog Number 1784-U2CN

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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 and recognize the consequences.
SHOCK HAZARD 	Labels may be on or inside the equipment (for example, a drive or motor) to alert people that dangerous voltage may be present.
BURN HAZARD 	Labels may be on or inside the equipment (for example, a drive or motor) to alert people that surfaces may reach dangerous temperatures.

Environment and Enclosure

ATTENTION

This equipment is intended for use in overvoltage Category II applications (as defined in IEC publication 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 Publication 11. Without appropriate precautions, there may be potential difficulties ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbance.

This equipment is supplied as enclosed equipment. It should not require additional system enclosure when used in locations consistent with the enclosure type ratings stated in the Specifications section of this publication. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings, beyond what this product provides, that are required to comply with certain product safety certifications.

In addition to this publication, see the following publications:

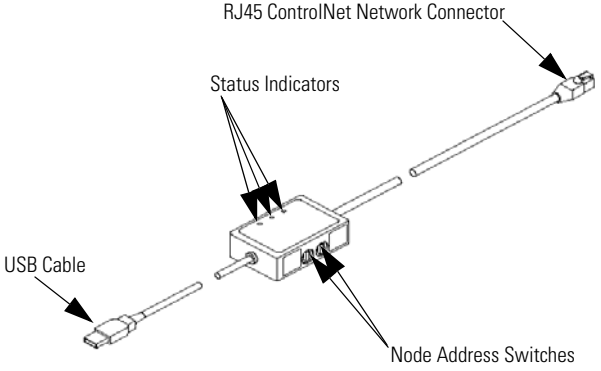
- publication 1770-4.1, Industrial Automation Wiring and Grounding Guidelines, for additional installation requirements.
- NEMA Standards publication 250 and IEC publication 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosures.

At the end of its life, this equipment should be collected separately from any unsorted municipal waste.

About the Cable

The 1784-U2CN USB-to-ControlNet cable lets you connect a notebook or desktop computer to a ControlNet network by using an unused USB port on the computer. The product replaces the 1784-PCC communication card for computers that do not have PCMCIA slots.

IMPORTANT To comply with the CE Low Voltage Directive (LVD), this equipment must be powered from a source compliant with Safety Extra Low Voltage (SELV) or Protected Extra Low Voltage (PELV).



Install the Cable

Follow these procedures to install the cable.

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.
- Do not touch connectors or pins.
- Store the equipment in appropriate static-safe packaging when not in use.

Obtain the Device Driver for the Cable

Follow these steps to download and install the device driver for the cable.

IMPORTANT A minimum of RSLinx Classic software, version 2.51, is required for use with the cable.

IMPORTANT If RSLinx Classic software, version 2.54 or later, is installed on the computer, the device driver is already installed on the computer. Skip this section.

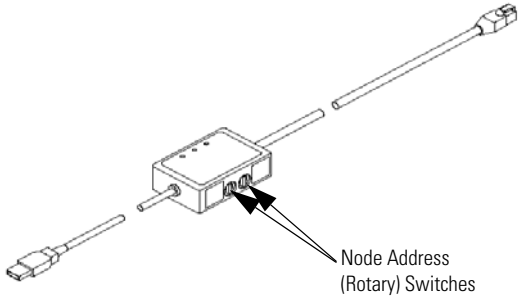
1. Visit http://www.rockwellautomation.com/knowledgebase/.
2. Open tech note ID 55431 and follow the instructions in the tech note to install the driver.

Configure and Connect the Cable

ATTENTION

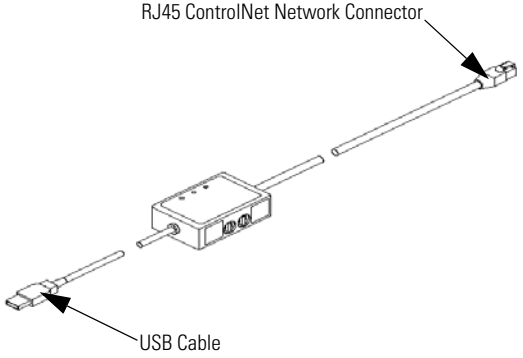
USB and ControlNet connection lengths must be less than 3 meters. Do not attempt to extend the cables.

1. Use the rotary switches to set the module node address to a valid number (1…99).



2. Insert the end of the cable having the USB connector into a USB port on a computer.

3. Insert the end of the cable having the RJ45 network connector into the ControlNet network access port (NAP) of a ControlNet network-enabled device.

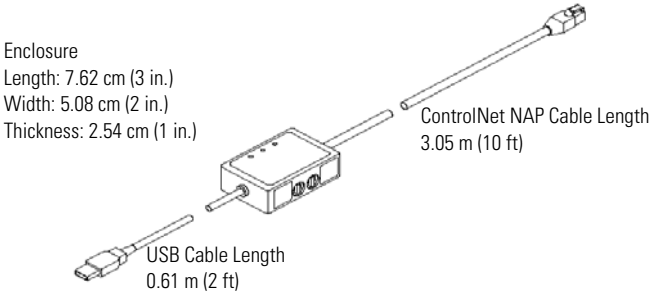


Traffic Analyzer Software

The 1784-U2CN cable is designed to work with Frontline's NetDecoder traffic analyzer software. For more information on Frontline's product, go to either http://www.rockwellautomation.com/encompass/ or http://www.fte.com.

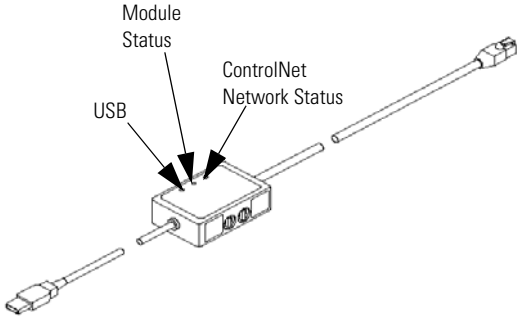
Product Dimensions

The following illustration shows the product dimensions.



Status Indicators

The following table describes the cable status indicators.



Indicator	Status	Description
USB	Green	The cable is configured, but no network traffic is present.
	Flashing green	Network traffic is present.
	Off	Unable to transfer data. • Disconnected from host. • In one of the following states: – default – powered – address – suspend

Indicator	Status	Description
Module Status (MS)	Green	The cable is operating normally.
	Off	No power to the cable.
	Flashing green	The cable is operating in a normal condition and is online with no connections established. • The cable may be in Standby mode. • The cable needs commissioning due to missing, incomplete, or incorrect configuration.
	Flashing red	The cable has a recoverable fault.
	Red	The cable has an unrecoverable fault and may need to be replaced.
	Flashing red/green	The cable is performing a self-test.
ControlNet Network Status (NS)	Off	Not on network.
	Red	Network interface faulted.
	Flashing red/green	Invalid network configuration (for example, a MAC ID above UMAX).
	Flashing red	• Duplicate node detected. • Link fault. • No MAC frames received.
	Flashing green	• Temporary channel error. • Listen only.
	Green	Normal operation. MAC frame received without error.

Specifications

USB-to-ControlNet Cable, Catalog Number 1784-U2CN

Attribute	Value
Enclosure type rating	Meets IP30
Power dissipation, max	0.5 W
Supply voltage	5.00V DC 5.25V DC max
Supply current	75 mA
Power consumption, max	0.5 W
Isolation voltage	30V continuous, Basic Insulation Type Type tested at 500V AC for 60 s, ControlNet to USB
Wiring category(1)	2 - on communication ports
ControlNet current value	70 mA @ 24V

(1) Use this Conductor Category information for planning conductor routing. Refer to Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1.

Environmental Specifications

Attribute	Value
Temperature, operating	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…55 °C (32…131 °F)
Temperature, nonoperating	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 Nonoperating Thermal Shock): -10…85 °C (14…185 °F)
Relative humidity	IEC 60068-2-30 (Test Db, Unpackaged Damp Heat): 5…95% noncondensing
Nonoperating shock	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 1000 mm (3.28 ft)
Emissions	CISPR 11: Group 1, Class A
ESD immunity	IEC 61000-4-2: 8 kV air discharges
Radiated RF immunity	IEC 61000-4-3: 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 10V/m with 200 Hz 50% Pulse 100% AM at 1890 MHz 10V/m with 1 kHz sine-wave 80% AM from 2000…2700 MHz

Certifications

Certifications (when product is marked)[1]	Value
c-UL-us	UL Listed Industrial Control Equipment, certified for US and Canada. See UL File E65584.
CE	European Union 2004/108/EC EMC Directive, compliant with: EN 61326-1; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions EN 61131-2; Programmable Controllers (Clause 8, Zone A & B)
C-Tick	Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions
CI	ControlNet International conformance tested to ControlNet specifications

(1) 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
ControlNet Coax Media Planning and Installation Guide, publication CNET-IN002.	Provides ControlNet network planning information.
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, http://www.ab.com	Provides declarations of conformity, certificates, and other certification details.

Notes:

Rockwell Automation Support

Rockwell Automation provides technical information on the Web to assist you in using its products. At http://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://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 (see phone number above to obtain one) to your distributor in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

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