Installation Instructions

ControlNet Modular Repeater Short-distance Fiber Module

(Cat. No. 1786-RPFS)

Use this document as a guide when you install a ControlNet™ repeater fiber module for short distances:

- To install the module, read these sections:

- For this information, refer to these sections:

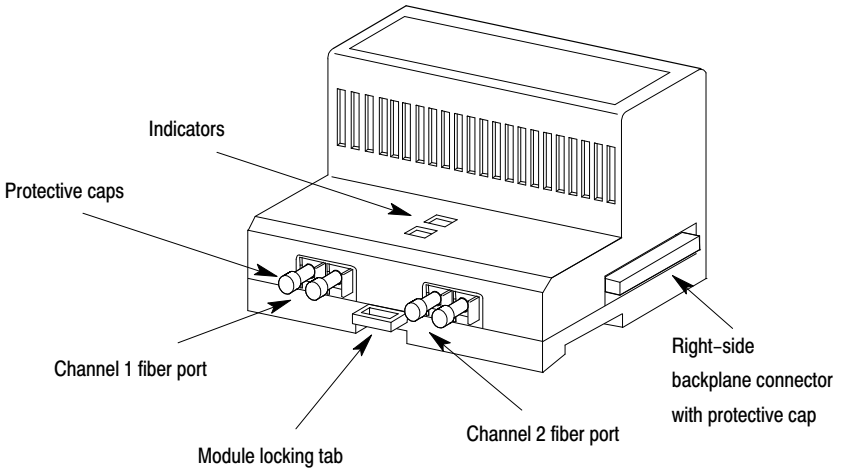
About The Fiber Module

Use this module when a short-distance (distances of 300m/984ft) fiber link is required between two ControlNet products. This fiber link provides ground isolation between nodes and is less susceptible to noisy environments.

The module provides:

- two independent full duplex fiber channels
- activity LED indicators for each fiber channel

The figure below identifies the components of the module:



The left side of the module (not shown here) also contains a backplane connector.

European Union 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.

If this product is installed within the European Union or EEA regions and has the CE mark, the following regulations apply.

EMC Directive

The module is tested to meet Council Directive 89/336 Electromagnetic Compatibility (EMC) using a technical construction file and the following standards, in whole or in part:

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

The module described in this manual is intended for use in an industrial environment.

Low Voltage Directive

The module is also designed to meet Council Directive 73/23 Low Voltage, by applying the safety requirements of EN 61131–2 Programmable Controllers, Part 2 – Equipment Requirements and Tests.

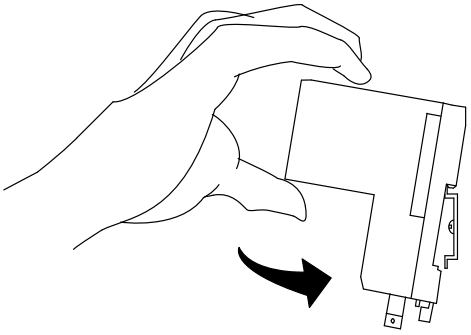
For specific information that the above norm requires, see the appropriate sections in this manual, as well as the following Allen-Bradley publications:

- Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1
- Guidelines for Handling Lithium Batteries, publication AG-5.4
- Automation Systems Catalog, publication B111

Mounting The Fiber Module

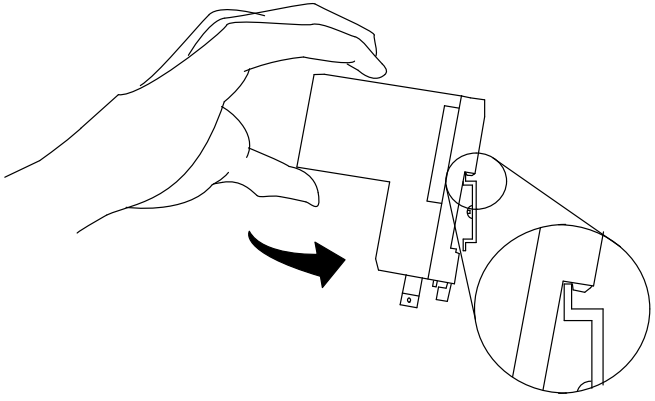
To mount the module on the DIN rail:

1. Position the module on a 35 x 7.5mm DIN rail (Allen-Bradley part number 199-DR1; 46277-3; EN 50022) at a 30º angle.



30074–M

2. Hook the lip on the rear of the adapter onto the top of the DIN rail, and rotate the module onto the rail.



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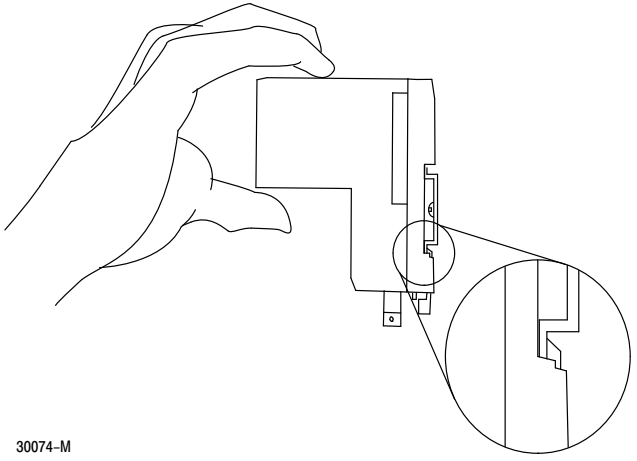
3. Press the module down onto the DIN rail until flush.

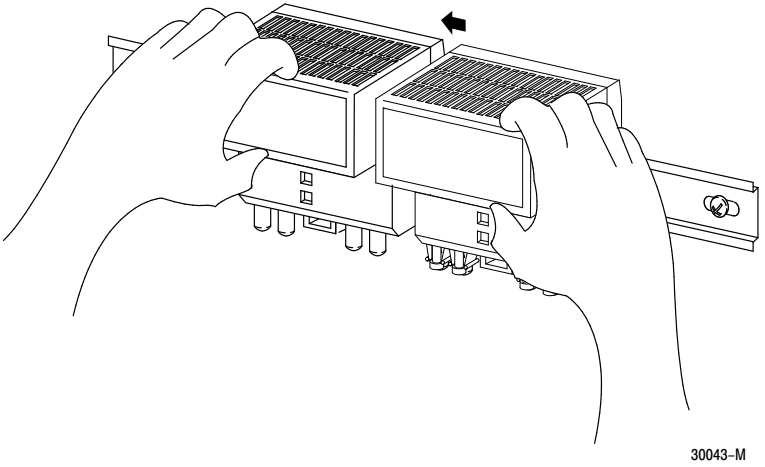
The locking tab should snap into position and lock the module to the DIN rail.

4. If the module does not snap into position, use a screwdriver or similar device to move the locking tab down while pressing the module flush onto the DIN rail. Release the locking tab to lock the module in place. If necessary, push up on the locking tab to lock.



5. Remove the protective backplane cap as shown in “Removing the Protective Caps” on page 7.

6. Once attached to the DIN rail, slide modules to the left to mate with the repeater adapter or another repeater module.



ATTENTION: Make certain that the adapter and repeater modules are secured together with DIN rail anchors. Failure to do so may result in the loss of communications and/or cause damage to the modules.

The total number of modules that can be attached to the repeater adapter can not exceed four or the total power consumption of the modules can not exceed 1.6A @ 5VDC, whichever comes first.

Important: If you exceed the module or power limit, you may cause damage to the repeater adapter and modules.

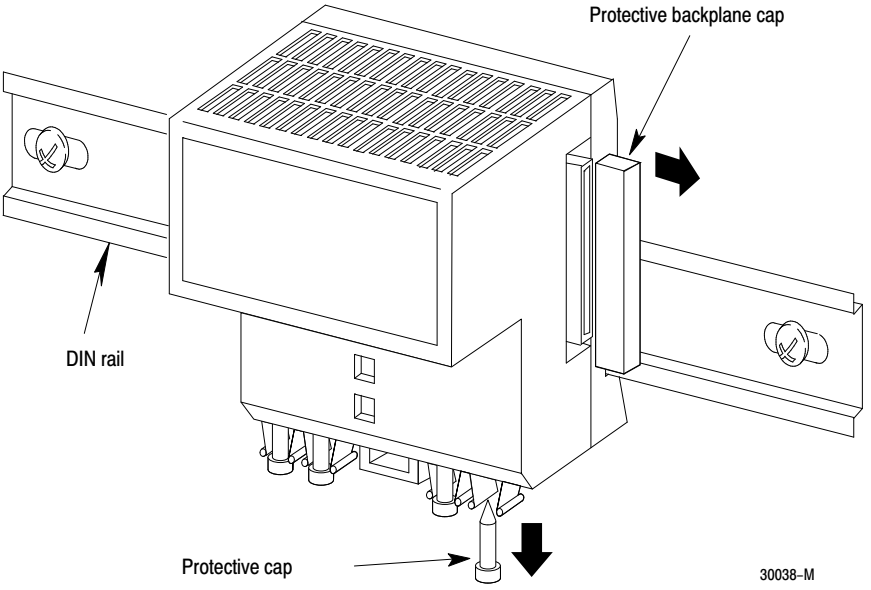
Important: If this is the right–most module, a DIN rail end anchor must be used to keep the modules from moving.

7. Connect the module wiring as shown in “Wiring The Fiber Module” on page 8.

Removing the Protective Caps

1. Remove the protective caps, Transmit and Receive, from the fiber channels that will be used.

2. Save the caps for future use.



If:	Then:
a channel is not going to be used	keep protective caps on channels to protect unit from dust.
another module will be connected to the right connector	remove the protective backplane cap and save cap for future use.
a module will not be connected to the right backplane connector	leave the backplane cap attached.

Wiring The Fiber Module for Zipcord Operation

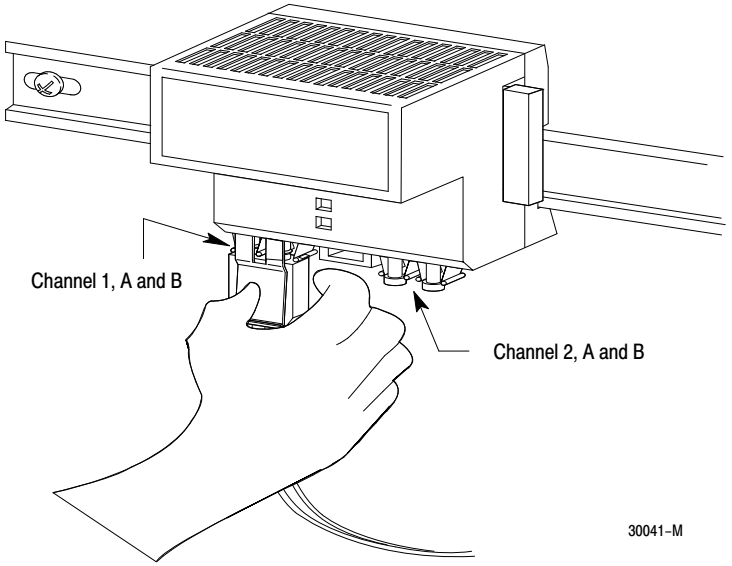
▶ If only one channel is wired, you can use Channel 1 or Channel 2.

The zipcord uses a duplex cable. Duplex cables use a single cable that contains 2 separate fibers, one for transmit and one for receive.

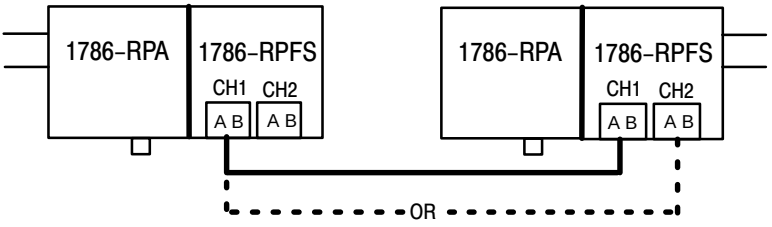
To wire the module:

1. Hold down the latch and insert the Channel 1 zipcord connector into **A** and **B** until the pins and latch lock into place.

   Make sure you insert the blue pin (receive) of the zipcord connector into **A** and the black pin (transmit) into **B**.



2. Hold down the latch and insert the other end of the duplex cable into another module using either Channel 1 or Channel 2 of the other module.



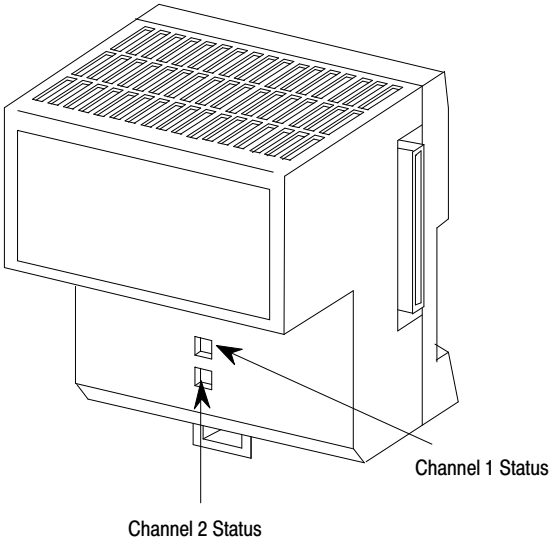
Important: The duplex cable is manufactured with the fiber reversed on opposite ends. This automatically connects A of one unit to B of the other.

Important: Never connect more than one duplex fiber or two simplex fibers between the same modular repeaters, even if they are from different modules on the same repeater.

Warning: Do not look directly into the fiber ports. Light levels may cause damage to eyesight.

Indicators

The figure below identifies indicators on the module:

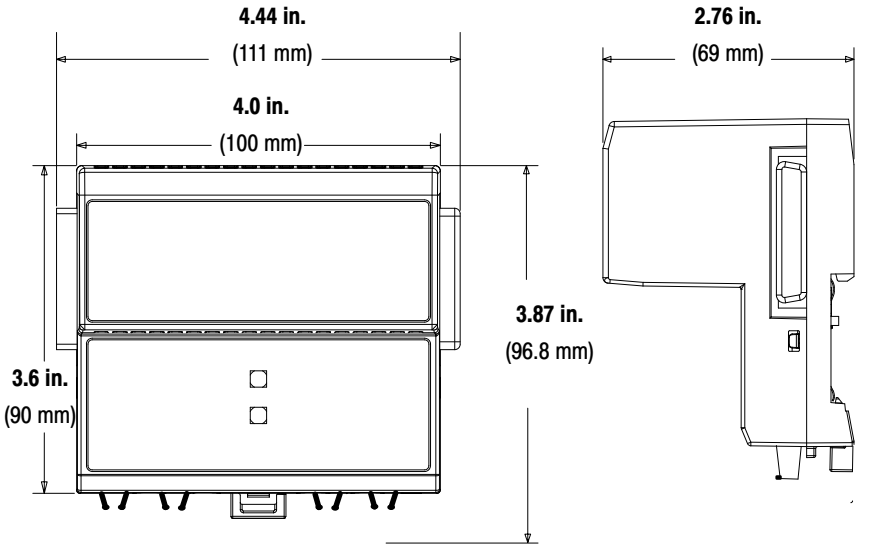


The table below provides probable cause for Channel 1 and Channel 2 (individually) status indicators:

Status Indicator	Probable Cause
Off	No power or hub is faulted
Green	Channel operational
Flashing Green/Off	No data activity on associated channel

Mounting Dimensions

The figure below provides mounting dimensions for the module:



Related Publications

The table below lists publications that you may want to refer to for additional information:

Publication	Publication Number
Industrial Automation Wiring and Grounding Guidelines	1770-4.1
ControlNet Coax Tap Installation Instructions	1786-5.7
ControlNet Cable System Planning and Installation Manual	1786-6.2.1
ControlNet Cable System Component List	AG-2.2

Specifications

The table below provides specifications for the module:

Communication Rate	5M bits/s
Indicators	Channel 1 Status – Green Channel 2 Status – Green
Backplane Power Requirements	300 mA maximum
Environmental Conditions	
Operating Temperature	0 to 60°C (32 to 140°F)
Storage Temperature	–40 to 85°C (–40 to 185°F)
Relative Humidity	5 to 95% noncondensing
Shock Operating	30 g peak acceleration, 11(±1)ms pulse width
Non-operating	50 g peak acceleration, 11(±1)ms pulse width
Vibration	Tested 5 g @ 10-500Hz per IEC 68-2-6
Fiber Type	200/230 micron HCS (hard-clad silica)
Fiber Termination Type	Versalink V–System
Fiber Operating Wavelength	650 nm (red)
Optical Power Budget	4.2 dB
Agency Certification (when product or packaging is marked)	CE marked for all applicable directives

Rockwell Automation
Allen-Bradley
Worldwide representation

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