



Protege DIN Rail Module Network Repeater Quick Start Guide



The Protege DIN Rail Module Network Repeater extends the network capabilities of the Protege system by allowing modules to connect to the system via an Ethernet connection, as well as providing optical isolation between up to three branches of the module network.

Using the PRT-MNR2-DIN, you can connect modules via the RS-485 network, and the network repeater can be connected to the controller using Ethernet. This allows much greater separation and ease of wiring than previously possible. In addition, the network repeater has three optically isolated RS-485 branches, easing power supply requirements.

When receiving this product, you should find the kit contains the items listed below. If you do not have the correct contents, please contact your distributor immediately.

- Protege DIN Rail Module Network Expander
- Protege DIN Rail Module Network Expander Quick Start Guide
- 3 330R EOL resistors

For more information on the Protege DIN Rail Module Network Repeater and other Integrated Control Technology products please visit the ICT website (<http://www.ict.co>).

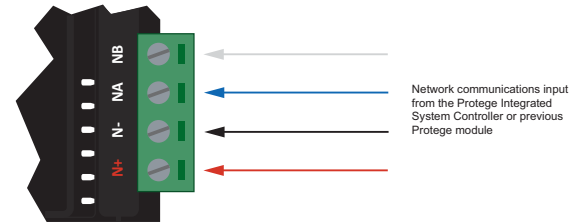
1. Power Supply

! For devices using hardware revision 010, COM1 can only be used for supplying power to the network repeater when the module is connected via Ethernet.

The network repeater provides the connection of up to three optically isolated RS-485 network stubs. To maintain proper isolation, each connection requires a separate power supply.

Power to the network repeater is supplied by the N+ and N- terminals on the COM1 port and is also used for the on-board electronics and the Ethernet connection.

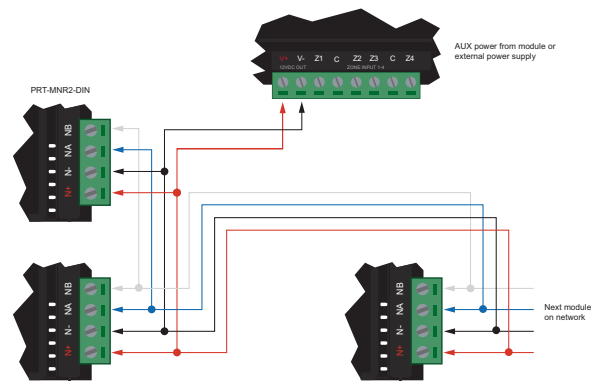
It is important that the N+ module power is 12VDC supplied from an independent battery backed power supply unit such as the PRT-PSU-DIN capable of supplying the required voltage.



Standard DC Power Connection

Warning:

- ▶ The 12V N+ and N- DC power input must be supplied from only ONE point. Connections from more than one 12V supply may cause failure or damage to the PRT-MNR2-DIN module.
- ▶ A 330 Ohm EOL (End of Line) resistor MUST be inserted between the NA and NB terminals of the module directly connected to the Module Network Repeater.



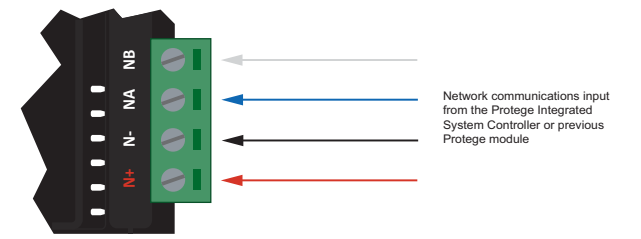
End of Line Resistor

The COM2 and COM3 ports are powered separately and optically isolated from each other.

2. Encrypted Module Network

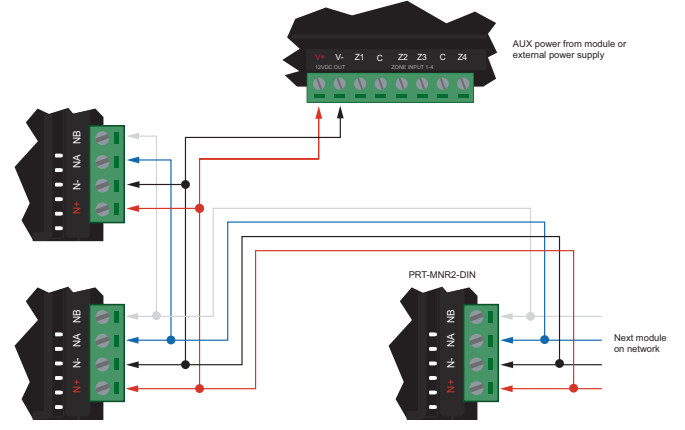
! For devices using hardware revision 010, you can only use COM2 and COM3 to create module network spurs when the network repeater is connected via Ethernet.

The network repeater incorporates encrypted RS-485 communications technology. The isolated communications interface offers full galvanic isolation to prevent ground loop noise and cross phase ground differential between network devices on the three RS-485 ports.



Standard Communication Connection

Always connect the NA and NB terminals of the network repeater to the NA and NB terminals of the communication network. The N+ and N- must go to a 12V power supply source as shown in the following diagram and connected at ONLY one +12V power source.



Network Power Supplied by Network Module

3. Ethernet 10/100 Network Connection

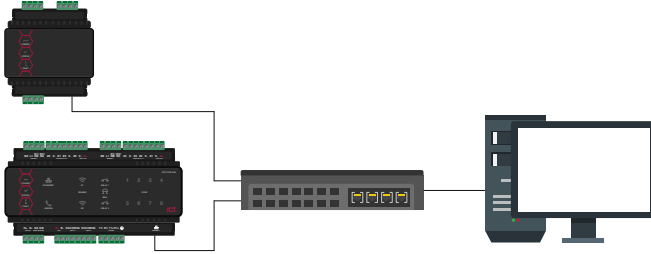
The network repeater can communicate with the controller via a 10/100 Ethernet connection using the encrypted UDP protocol, or via the RS-485 module network using the COM1 port.

Ethernet communication is not enabled by default, and is configured through the web interface.

When installing an Ethernet connection the network repeater should be interfaced using a standard segment (<100M in length) and should be connected to a suitable Ethernet hub or switch.

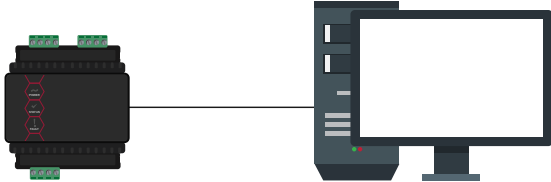


Installing the module network repeater on an active network requires knowledge of the configuration and structure for the network. Always consult the network or system administrator and ask them to provide you with a fixed IP address that can be assigned to the module network repeater.



Ethernet 10/100 Switch Hub Connection

Temporary direct connections can be used for onsite programming by using a standard Ethernet cable.



Ethernet 10/100 Direct Connection

4. Repeater Configuration

Configuration of the network repeater is carried out using the built in web interface. To access the web interface, open an Internet browser (such as Internet Explorer or Mozilla Firefox) and type the IP address of the network repeater into the address bar.

The default IP address is **192.168.1.3** and the default operator login is **admin** with the password **admin**. For security reasons, this password should be changed before deployment.



When attempting to view the web page from a network that uses a Proxy Server, ensure the browser connection options are configured to recognize local addresses.

For more information on programming the network repeater through the web interface, refer to the full installation guide available on the ICT Website (<http://www.ict.co>).

5. Technical Specifications

Operating Voltage	12V DC
Operating Current	65mA (typical)
RS-485	3 isolated RS-485 communication interface ports
Ethernet	1 10/100Mbps Ethernet Communication Link
Dimensions (L x W x H)	78 x 90 x 60mm (3.07 x 3.54 x 2.36")
Weight	TBC
Operating Temperature	0°-49°C (32° - 122°F)
Humidity	0%-93% non condensing, indoor use only (relative humidity)
Storage	-10°- 85°C (14° - 185°F)

It is important that the unit is installed in a dry cool location that is not affected by humidity. Do not locate the unit in air conditioning or a boiler room that can exceed the temperature or humidity specifications.



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