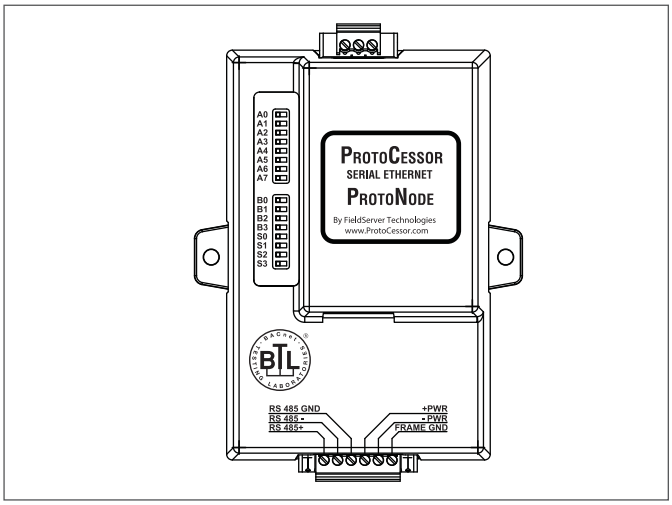
Raychem PROTONODE-RER-1.5K / PROTONODE-RER-10K

MULTI-PROTOCOL DEVICE SERVER INITIAL SETUP GUIDE



The Raychem ProtoNode-RER multi-protocol gateway is used to connect Raychem C910-485, TraceTek SIM, and ACS-30 Controllers to Building Management Systems (BMS) using BACnet or Metasys N2 protocol.

The ProtoNode-RER is preprogrammed with the Raychem Modbus registries for simple integration into your BMS. The ProtoNode-RER-1.5K is configured to communicate with up to 6 C910-485 controllers or an ACS-30 system up to 25 circuits. The ProtoNode-RER-10K is configured to communicate with an ACS-30 system up to 170 circuits.

For technical support call Pentair Thermal Management at (800) 545-6258.

TOOLS REQUIRED

- Small flat-blade screwdriver

ADDITIONAL MATERIALS REQUIRED

- Wall fasteners for surface mounting (four fasteners)
- RS-485 cable (Belden # 8761, or Carol # C2514)
- 9–30 Vac/Vdc power source recommended (5 Vdc also compatible)
- Appropriate Raychem controller Installation Instructions

For detailed configuration information, including a complete start-up guide and mapping documents, please contact your local sales rep or Pentair Technical Support. Global support contact information is listed at the end of this document.

APPROVALS

BACnet Testing Labs (BTL) B-ASC

ADDITIONAL INFORMATION

The ProtoNode-RER gateways are highly flexible and accommodate the most commonly used protocol. They come pre-programmed with the Modbus mapping of the C910 and ACS-30 controllers.

The initial set up of these controllers is outlined on:

Page 2 for the ProtoNode-RER (BACnet and Metasys N2)

The set-up involves 4 steps:

1. Configure the DIP switches for address, baud rate, protocol and Raychem controller (Figure A)
2. Connect RS-485 to Raychem controller (Figure B)
3. Connect power supply to ProtoNode (Figure B)
4. Connect to the Field or BMS system after the completing steps 1-3 (Figure C)

Once the gateway is connected and configured the Raychem Modbus registries will be visible to the system integrator through the field BMS.

Communication set-up requirements for C910 and ACS-30 controllers:

Protocol:	Modbus-RTU (default for ACS-30)
Baud rate:	Auto or 9600
Parity:	None
Modbus Address:	1

⚠ WARNING:

FIRE AND SHOCK HAZARD: Do not mount the ProtoNode-RER in a hazardous location. Follow all local electrical safety procedures. Disconnect power before servicing or opening this unit. For technical support, call Pentair Thermal Management at (800) 545-6258.

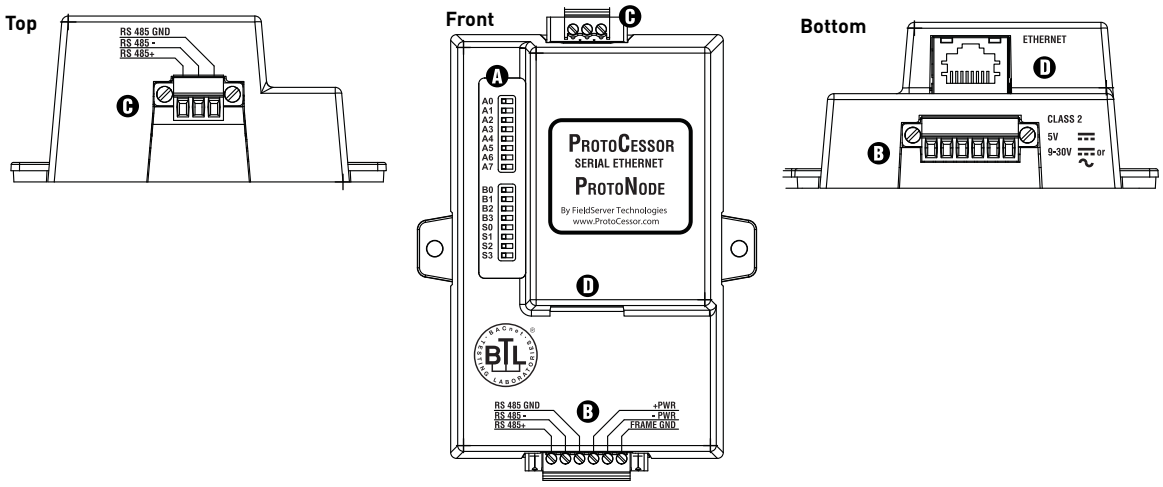
⚠ IMPORTANT:

The ProtoNode-RER is an electronic unit. During installation, take the following precautions to avoid damage to its electronic components:

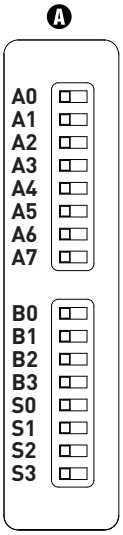
- Handle with care to avoid mechanical damage.
- Keep electronics dry.
- Avoid exposure to static electricity.
- Avoid contamination with metal filings, liquids, or other foreign matter.

ProtoNode-RER Layout, Terminals and Switch Positions

ProtoNode-RER



A. Configuration DIP Switch Settings



Field configuration DIP switches to set:

- Baud rate
- Host protocol
- Raychem controller

The ProtoNode-RER has two banks of DIP switches to configure the protocol translator to your application requirements:

Bank A Node ID or Mac address is coded using 8 digit binary settings. The first 6 of 255 possible address settings are shown below, for further address settings refer to the ProtoNode Startup Guide for Pentair Rev 4. This guide is available from your local sales rep

A7	A6	A5	A4	A3	A2	A1	A0	Address
Off	Off	Off	Off	Off	Off	Off	Off	0
Off	Off	Off	Off	Off	Off	Off	On	1
Off	Off	Off	Off	Off	Off	On	Off	2
Off	Off	Off	Off	Off	Off	On	On	3
Off	Off	Off	Off	Off	On	Off	Off	4
Off	Off	Off	Off	Off	On	Off	On	5

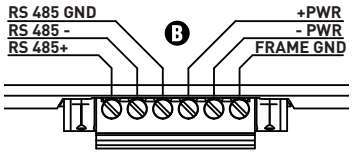
Bank B Bank B has several functions. Switches B0–B3 set the baud rate. Switches S0–S3 are used to select the field protocol and the connected Raychem or TraceTek device.

B3	B2	B1	B0	Baud
Off	Off	Off	Off	Auto[1]
Off	Off	Off	On	110
Off	Off	On	Off	300
Off	Off	On	On	600
Off	On	Off	Off	1200
Off	On	Off	On	2400
Off	On	On	Off	4800
Off	On	On	On	9600
On	Off	Off	Off	19200
On	Off	Off	On	20833
On	Off	On	Off	28800
On	Off	On	On	38400
On	On	Off	Off	57600
On	On	Off	On	76800
On	On	On	Off	115200

S3	S2	S1	S0	Model	Protocol
Off	Off	Off	Off	C910	BACnet IP
Off	Off	Off	On	C910	BACnet MSTP
Off	Off	On	Off	C910	Metasys N2
Off	Off	On	On	ACS-30	BACnet IP
Off	On	Off	Off	ACS-30	BACnet MSTP
Off	On	Off	On	ACS-30	Metasys N2

[1]Auto-baud is only supported for BACnet MSTP

B. Raychem RS-485 and Power Supply Connections



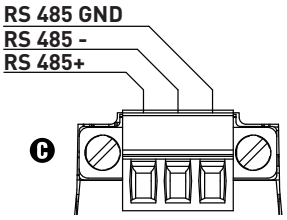
RS-485 connection to Raychem controller.

Note: Ground the RS-485 cable to the "Frame GND" terminal not the "RS 485 GND" terminal. Connect the incoming power supply to +PWR, -PWR and FRAME GND terminals.

The ProtoNode is factory set for 9-30 Vdc/Vac but can be set to operate at 5 Vdc. For details please go to:

www.protocessor.com

C. Field (BMS) Connection



Filed (BMS) computer connection: RS-485 connection to BACnet MS/TP or Metasys N2. Use the Ethernet connection shown in D for BACnet-IP.

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