

ProtoNode

LONWORKS®, BACnet®, Metasys® N2,
Multi-Protocol Device Server



A Sierra Monitor Company

*ProtoNode is an external, high performance, low cost **Building and Industrial Automation multi-protocol gateway** for OEMs wanting to provide protocol translation between Serial-Serial, Serial-Ethernet and Ethernet-Ethernet devices using LONWORKS®, BACnet®, Metasys® N2 by JCI, Modbus, DNP3, and more.*

ProtoNode is designed to be used by OEM customers who need to quickly and easily enable their new or legacy devices to interface with other protocols. The extensive FieldServer driver library, coupled with the FieldServer experience in protocol translation gateways provides the OEM customer with confidence that their products will meet the interface requirements for foreign networks.

Configuration Auto-Selector enables manufacturers to preload multiple predefined configurations onto each ProtoNode. DIP switches select specific configurations based upon application. The result is that the manufacturer can meet multiple installation requirements with the same component with no concerns about selecting a specific component for each job, saving manufacturing costs, installation costs and enhancing customer satisfaction.

This feature supports Modbus RTU, Modbus TCP, BACnet IP, JCI Metasys N2OPEN, DNP 3.0, AllenBradley EtherNet/IP and LONWORKS. There are various scenarios on how this feature can be employed:

- Common device protocol interface to multiple protocols
- Multiple devices interface to common protocol
- ProtoNode reads a register on OEM device to automatically load proper configuration



ProtoNode RER

ProtoNode LER

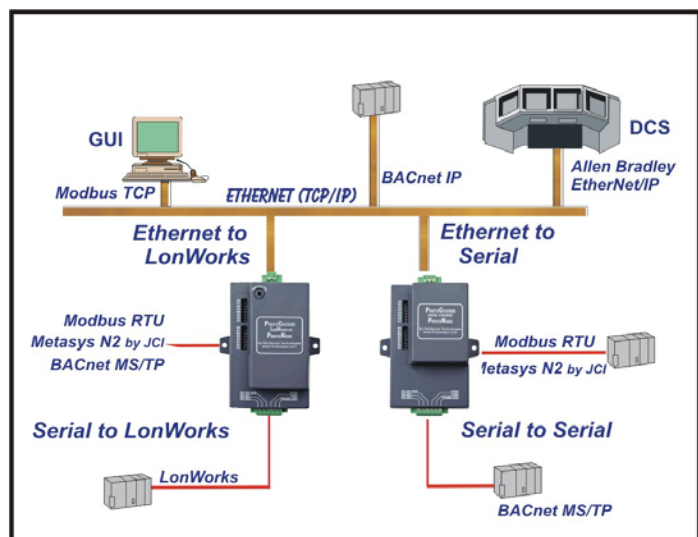
For quick and simple installation the ProtoNode RER and LER have DIP switches for setting the Node-ID, MAC address and Baud-Rate (Auto-Baud for BACnet MS/TP is supported).

ProtoNode RER is based on an ARM9 processor for fast performance includes two RS-485 and one Ethernet port. The device can be programmed in the field or pre-programmed in the factory. BACnet BTL pending.

ProtoNode LER includes a LONWORKS port plus Ethernet and RS-485 ports. BACnet BTL pending.

Features/Benefits

- ✓ The most flexible and versatile multi-protocol Device Server on the market.
- ✓ Configuration Auto-Selector to select from pre-loaded defined configurations.
- ✓ BACnet International's BTL mark pending for the ProtoNode RER.
- ✓ BACnet COV support provides fast data communication while reducing the traffic over a BACnet network.
- ✓ Supports virtual nodes allowing multiple OEM controllers to connect to a single ProtoNode and seen as separate controllers on the various field networks.
- ✓ Interfaces to over 85 Building and Industrial Automation Protocols.
- ✓ Easily supports OEM's custom proprietary host serial or Ethernet protocols.
- ✓ Multi-Client and Multi-Server support ensures interoperability between any Industrial and or Building Automation protocols.
- ✓ Flash upgradeable.



Metasys® is a registered trademark of Johnson Controls, Inc.
LONWORK® is a registered trademark of Echelon Corp.
BACnet® is a registered trademark of ASHRAE.

Specifications

Supported Electrical Connections:

ProtoNode Serial (Model RER):

- 1 - 6 pin Phoenix Connector
 - ✓ 1 RS-485 +/- Ground port
 - ✓ Power +/- Frame Ground port
- 1 - 3 pin Phoenix connector RS-485
 - ✓ 1 RS-485 +/- Ground port
- 1 Ethernet -10/100 Ethernet port

ProtoNode LonWORKS (Model LER):

- 1 - 6 pin Phoenix Connector
 - ✓ 1 RS-485 +/- Ground port
 - ✓ Power +/- Frame Ground port
- 1 Ethernet -10/100 Ethernet port
- 1 FTT-10 LonWORKS port

Operating

Power Requirements: 9-30 VDC or VAC or 5 VDC

Current draw @ 12V

RER @ 12V = 150 mA

LER @ 12V = 279 mA

Environmental

Operating Temp.: -40°F to 187°F (-40°C to 85°C)

Relative Humidity: 5-90% RH, non-condensing

Enclosure

Dimensions: 4.37 x 2.75 x 1.50 inches (L x W x H)
(11.10 x 7.00 x 3.81 cm)

Approvals

BACnet Testing Labs (BTL) B-ASC pending for
ProtoNode RER

Warranty

Warranty: Two years return to factory

Supported protocols:

- LonWORKS (*ProtoNode LER only*)
- **Serial** (RS-485) Protocols (*ProtoNode LER and RER*)
 - Allen Bradley DF1
 - BACnet MS/TP
 - DNP 3.0 Serial
 - JBus
 - Metasys N2
 - Modbus RTU
 - TL1

Ethernet Protocols (*ProtoNode LER and RER*)

- Allen Bradley EtherNet/IP
- Allen Bradley CSP
- BACnet IP
- BACnet Ethernet
- Modbus TCP/IP
- GE-EGD
- GE-SRTP
- OPC
- SNMP
- XML

FieldServer Technologies has a full library of over 80 drivers so check with ProtoCessor sales to determine what additional protocols are available to meet specific application needs.



FieldServer Technologies offers a full range of OEM devices to enable manufacturers to easily provide the protocols their customers demand:

- ✓ **ProtoCessor** - embedded protocol translator
- ✓ **ProtoCarrier** - daughter cards to enable addition of ProtoCessor without hardware redesign
- ✓ **ProtoConnect** - semi-custom protocol OEM solution
- ✓ **ProtoNode** - external fully enclosed protocol OEM solution. In addition to the ProtoNode LER and RER, ask about the ProtoNode RAR and BRE.
 - The **ProtoNode RAR** is particularly designed for cost sensitive high volume applications that support RS-485 to RS-485 conversion (for Modbus RTU, BACnet MS/TP or Metasys N2 conversion), and can support 100-150 Modbus RTU registers. The protocol mapping is programmed at the factory and cannot be changed in the field.
 - **ProtoNode BRE** includes two serial ports that can be configured as RS-232 or RS-485 plus an Ethernet port. (see separate ProtoNode BRE datasheet)