

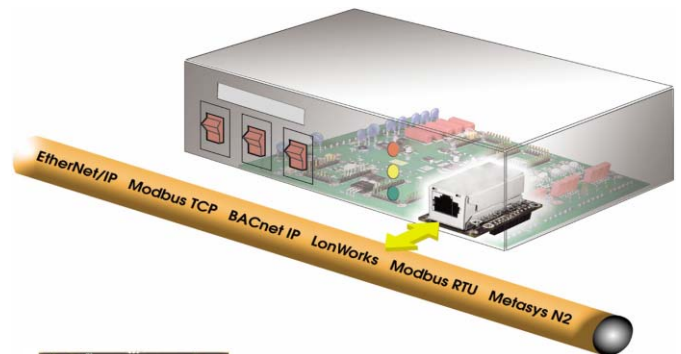
### Overview

Sierra Monitor’s ProtoCessor embedded gateways provide a TTL to RS-485, Ethernet, and LonWorks connection, enabling a cost effective interface to Building Management Systems (BMS) and an immediate IoT Cloud interface for OEM products. For the OEM that needs an internal protocol translation solution for their devices, the ProtoCessor is a perfect fit with a minimal hardware footprint of one common TTL (TX/RX-5VDC) on the PCB hardware (2x10 pin ProtoCessor socket).

The ProtoCessor enables OEMs to compete in a broader market by meeting specifications for BMS connectivity. Integrated SMC Cloud support further enhances the ProtoCessor’s value by enabling remote monitoring, control and data visualization. The only protocol gateway with a no cost cloud interface, the ProtoCessor dramatically improves time to market and remote site support for OEM field devices. However, for OEM devices that do not have a host serial protocol, support for ASCII and binary protocols is also available.

Cloud enabled devices change the game for OEMs. Users can view data via a configurable dashboard, download historical data and provide remote monitor/control for any connected device. Additionally, notification functions allow SMS/email for trouble or alarm conditions.

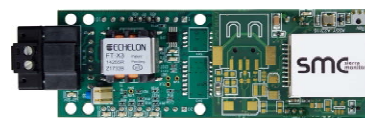
Each embedded gateway is delivered pre-configured for the OEM’s specific requirements. No additional programming or mapping is necessary.



**FFP-ETH** Ethernet Protocol Translation



**FFP-485** RS-485 Protocol Translation



**FFP-LON** LonWorks FTT10 Protocol Translation



### ProtoCessor Features and Benefits

- Short time to market for BMS, industrial protocols and cloud connected devices.
- No configuration files need to be built in the field to support one or multiple of the OEMS devices.
- A ProtoCessor connects protocol networks (BACnet MS/TP, BACnet/IP, Metasys N2, SNMP, XML over HTTP, EtherNet/IP, DNP 3.0, KNX, M-Bus or LonWorks and many others).
- Supports up to 10,000 device registers – determined by the model selected.
- Can support OEM proprietary protocols to building management systems.
- BTL and LonMark certified.
- The **optional embedded BACnet Explorer** allows reps and OEMs to quickly validate that their product is working on BACnet MS/TP and/or BACnet/IP without needing a BMS Integrator on site.
- On-board diagnostics allow easy troubleshooting for both serial and Ethernet communications.

ProtoCessor	Point Count	Certifications
FFP-ETH	1,200	-
FFP-485 Level 1	1,500	BTL
FFP-485 Level 2	5,000	BTL
FFP-485 Level 3	10,000	BTL
FFP-LON Level 1	1,500	LonMark
FFP-LON Level 2	4,096	LonMark
FFP-LON Level 3	N/A	LonMark

### Advantages of Using a Sierra Monitor ProtoCessor

- Penetrate new markets and increase sales: OEMs can easily offer their customers protocol support that meets their interface specifications, enabling market expansion to new arenas.
- Expanded capabilities with minimal development and in-house protocol support costs: No need to reinvent the wheel, use Sierra Monitor’s years of experience in protocol translation.
- Rapid Time-to-Market: Minimal coding, hardware demands, or changes to current OEM design required. Even less time and cost to add additional protocols!
- Minimal impact to application hardware and software design: Only one socket is needed to embed any ProtoCessor in the OEM’s design and it is compatible with 8/16/32 bit Microcontrollers.
- Compliance “built-in”: Sierra Monitor’s leadership in protocol translation means full protocol compliance through continuous testing and certification of the protocols via standards governing groups.
- Dramatically reduced NRE: No costly purchase of source code and/or significant engineering time is required. All required source code and hardware is provided.

### Benefits of the SMC Cloud

- Registering SMC’s ProtoNode BMS/IoT Gateways on SMC’s tenant based IoT Cloud Platform, effortlessly connects the OEM’s devices to the cloud, allowing secure remote access for diagnostics, monitoring, alarming and configuration of their products in the field.
- SMC’s Cloud Platform Dashboard provides enriched data metrics (averages and real-time values displayed in gauges and graphs) enabling collaboration and comparison across multiple sites.
- No annual subscription to connect SMC’s Gateways to the SMC Cloud Platform until 2023.



SMC Cloud

### Specifications \*

#### Field Connections

- FFP-ETH: Ethernet
- FFP-485: 1 x RS-485 & Ethernet
- FFP-LON: FTT-10 & Ethernet

#### Host Connections

Standard Serial TTL Interface-TX and RX  
 Socket on Board: 2 x 10 20-pin  
 (Header Pins Samtec Part # TLW-110-05-G-S)

#### Temperature

- Ambient: -40° to 185 °F (-40° to 85 °C)
- Storage: -40° to 257 °F (-40° to 125 °C)
- Humidity: 5 to 90% RH

#### Power Consumption

- FFP-ETH 5VDC@208 mA
- FFP-485 5VDC@350 mA
- FFP-LON 5VDC@480 mA

#### Serial Port Isolation

- 1500v galvanic isolation

#### Dimensions (LxWxH)

- FFP-ETH 1.8 x 1.2 x 0.8 in  
4.6 x 3.0 x 2.0 cm
- FFP-485 2.7 x 1.2 x 0.8 inches  
6.9 x 3.0 x 2.0 cm
- FFP-LON 3.3 x 1.2 x 0.8 inches  
8.5 x 3.0 x 2.0 cm

#### LonMark Certification on FFP-LON (FPC-F04)

- SPID: 80:00:95:46:00:84:04:05
- Profiles: 0000 – Node object (1)  
0001 – Open Loop Sensor Object (5)  
0003 – Open Loop Actuator Object (5)

#### Settings on FFP-485

DIP Switches set Baud Rate, MAC Address, Device Instance, selection of stored predefined configuration files, and end of line termination for RS-485 networks

#### Approvals

- BACnet Testing Labs (BTL) B-ASC Ver.12
- LonMark 3.4 Certified
- RoHS Compliant
- DNP 3.0 Conformance tested
- CE Approved
- Various ProtoCessors have the following approvals:
- External Boards: ProtoCarrier
- External Boxes: ProtoNode
- For OEM devices that need our protocols and have a custom form factor that the ProtoCessor Semi-Custom needs to fit



\*Specifications subject to change without notice

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