9810 mini Remote Terminal Unit (miniRTU)

Collects and transmits data from multiple storage tanks to a central system through a single tank gauge interface

Highlights

- Ethernet ready, provides high-speed communications in real time
- Integrates with legacy tank gauging interfaces (Serial, Bi- Phase Mark, Mark/Space, Tankway)
- Designed for small- to medium-scale fuel farm operations with single field protocol communication systems
- Modbus for host or field integration
- Uses Ethernet-based OPC UA and Modbus TCP communications
- Fully compatible with FuelsManager® (tank inventory management made easy)
- Supports up to 32 tanks with volume calculations
- Integrates Modbus integer and floating point registers to read data from custom devices
- US, Canada, IECEE, and CE approvals

Intelligent Interface Module Architecture

The 9810 miniRTU is a family of compact-size Remote Terminal Units (RTU) with distinct products for Serial, Bi-Phase Mark, Mark/Space, and Tankway interfaces.

- Built-in software function library
- Surge protection conforming to ANSI/IEEE standards
- Industry standard Ethernet supports OPC UA, Modbus TCP, and Modbus over TCP
- Non-volatile database
- Up to 6 channels (max)
- Supports up to 32 tanks
- Real-time operating system
- Remote file transfer supported

Application

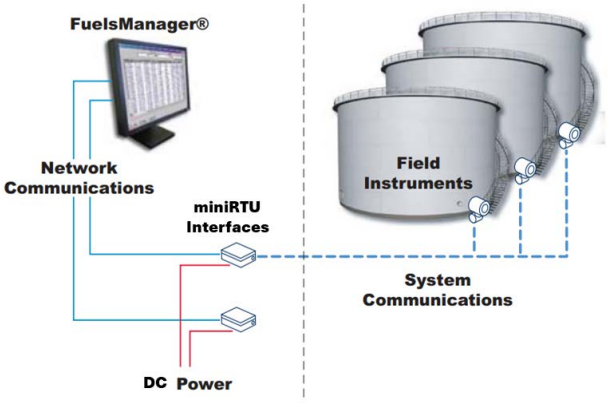
The 9810 miniRTU is a tank gauge interface for data acquisition and host gateway for tank farm, pipeline, refinery, or other applications. The 9810 miniRTU is designed for applications where a cost-effective control system is needed for remote collection of field data and control of equipment. The 9810 miniRTU supports protocols that can communicate with both existing and new tank gauging instrumentation to read data, such as level, pressure, and temperature. It is possible to integrate float & tape transmitters, hydrostatic tank gauging, servo, magnetostrictive or radar gauges using a single device.

Host Communication

The 9810 miniRTU combines with FuelsManager to provide an extremely cost-efficient and reliable tank inventory system that is compatible with a variety of other host systems through industry standard Modbus protocol. Several types of protocols are available for assignment to the communication ports.

Configuration and Programming

Programming is accomplished remotely from the host using an OPC UA client or locally using a PC with the Windows based configuration program, ViewRTU. The tools simplify configuration and diagnostics, allowing uploading of final equipment configurations.



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Technical Specifications

CPU
- 480 MHz CPU

Memory
- 64 MB flash
- 128 MB SDRAM

Host Communication
- Ports: Up to 3
- Type: USB-B/RS-232 or RS-232/RS-485
- Protocol: RTU and Modbus Slave

TCP / IP Communications
- (1) 100 Mbps Ethernet interface using OPC UA over TCP/IP, Modbus TCP Server, Modbus TCP Client

Debug Port
- User configurable to one of the serial channels

Power Supply
- DC Requirements: 20 – 60 VDC
- Surge Protection: Meets ANSI / IEEE standards

Physical
- Dimensions: 6.5” H x 7.7” W x 3.3” D
- Material: Aluminum
- Mounting: Panel (wall) or DIN rail mounted
- Ratings: IP40 / IP 66 w/ optional enclosure
- Ratings: NEMA 4

Environmental
- Operating Temperature: -40 °F to +176 °F (-40 °C to +80 °C)
- Storage Temperature: -40 °F to 212 °F (-40 °C to 100 °C)
- Humidity: 5 to 95% RH (non-condensing)

Intelligent Communication Interfaces
- Automatically scans for level, temperature, and status information
- Industry standard protocols: Modbus
- Tank gauge interfaces: Enraf, Mark/Space, GSI, L&J Tankway, Endress+Hauser, Hectronic OptiLevel, and Veeder-Root

Architecture/Options

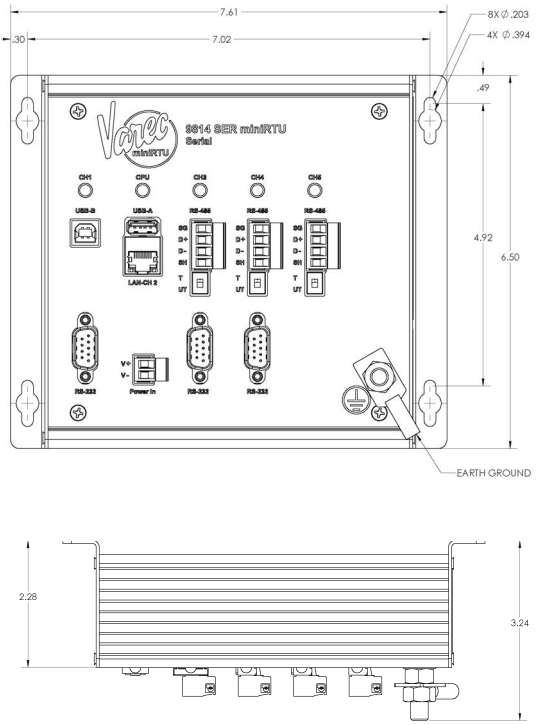
The 9810 miniRTU consists of a high-performance CPU board and one interface board contained within a physical enclosure. The unit interfaces to a variety of field devices and intelligent instrumentation.

All versions of 9810 miniRTU have four common communication channels. Channel 1 uses either a USB Type B or RS-232 connector for serial communication. Channel 2 uses an Ethernet connector for TCP/IP communications. Channel 3 uses an RS-232 connector for serial communication. Channel 4 uses either a RS-232 or RS-485 connector for serial communication.

The common communication channels support the following data protocols: Ethernet (OPC UA & Modbus TCP), RTU Slave (for ViewRTU), Modbus Master & Slave, TLS (Veeder-Root), Enraf (GPU & FlexConn), HLS (Hectronic OptiLevel), and Debug communication.

The available options (and the data protocols they support) are listed below:

- 9812 BPM: Bi-Phase Mark Model (Enraf) provides two additional BPM connectors in channels 5 and 6 for BPM communication.
- 9814 SER: Serial model provides two additional RS-485 connectors in channels 3 and 5 for serial communication.
- 9815 M/S: Mark/Space (Varec) model provides additional Mark/Space connectors in channel 5 for Mark/Space communications.
- 9816 LJ: Tankway (L&J) model provides additional Tankway connectors in channel 5 for Tankway communications.



Installation Guidelines

With either DIN-rail or wall-mount option, the miniRTU can be installed in a variety of industrial environments. Adding an optional NEMA 4 enclosure provides additional protection.

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