Remote Telemetry Module™ (RTM II)

Remote Monitoring and Control

Description

The 2nd generation Remote Telemetry Module™ (RTM II) is a cost-effective communication solution for remote monitoring and control of Intelligent Electronic Devices (IEDs) that control electric distribution system assets such as reclosers, switches, capacitor banks, breakers, voltage regulators and meters. Building on the capabilities of the original RTM, the RTM II enables remote firmware updates[1], includes a USB port, and communicates using GSM cellular networks or Sensus FlexNet™ private networks. The RTM II communicates with any IED that supports DNP 3.0/IEEE 1815 or Modbus protocol.

Features

APPLICATIONS

The units are ideally suited for Smart Grid distribution automation applications such as reclosers, capacitor banks, distribution switches, faulted circuit indicators, voltage regulators, distributed generation, load control and distribution substations.

FlexNet models incorporate all of the standard FlexNet system security features. Cellular models use standard cellular authentication and encryption which is augmented with additional security features at Sensus.

Sensus Distribution Automation (DA) provides the end-to-end communication link via secure, private connections to leading cellular carriers in North America so the product works 'out of the box' anywhere within the extensive North America coverage area. No license or local cellular account is required. FlexNet enabled models also work 'out of the box' on FlexNet systems.

The RTM II continuously polls connected IEDs through a local serial connection. When a user defined change is detected, the RTM II transmits an event report via the cellular or FlexNet network. This minimizes communication traffic while providing real-time information. Status of equipment is obtained via the utility's SCADA system using Sensus SCADA-Xchange™ or through the Sensus PowerVista™ application with a standard PC browser.

FEATURES AND BENEFITS

- Monitors status of IEDs and reports only user configured data, events and alarms.
- Designed specifically to communicate with IEDs from leading manufacturers such as Cooper Power Systems, ABB, Schweitzer Engineering Laboratories, S&C Electric Company, GE, T&B/Joslyn Hi-Voltage, ICMI and many others.
- Communicates via standard RS-232 serial connection with IEDs. The RTM II functions as the master, in the master-slave relationship, polling the IED for information.
- Up to 99 digital/analog points per IED
- **Multi-Address (MA) model** supports up to five DNP 3.0 device addresses:
  - Supports a different DNP point map/profile of up to 99 points for each IED

Supports intelligent reporting & control via:

- Unsolicited Report by Exception on user-defined analog or digital points
- Time scheduled reports on user-selected points and defined time intervals
- Updates are available on demand via SCADA or the PowerVista application

- Information is sent to the PowerVista application at the Sensus Data Center, and optionally to the utility SCADA system.
- Secure two-way communications allow direct status queries and control of the IED.
- Integration kits, including specific device point maps/profiles, are available for most popular IEDs to facilitate simple and easy installation.
- DA Configurator creates unique configuration profiles for all SCADA points that are monitored and reported. For each SCADA point, the user can specify criteria such as:
  - Three reporting set points and a configurable trigger time per analog input
  - Binary input report-on-change with configurable trigger time
  - Time scheduled reports with configurable reporting interval from 1 minute up to 14 days

1 Available on cellular models only at this time.

SENSUS

Features

FEATURES AND BENEFITS

Continued

POWERVISTA™ APPLICATIONS

The PowerVista application is a powerful and flexible suite of tools for managing communications and distribution system equipment.

- Access equipment status from any PC using a standard browser
- Each customer has a secure account that provides access to their equipment
- Data is secure and password protected
- No master software or local cellular account is required.
- Manage equipment, communications and users.
- Monitor and control field equipment.
- Automated user notifications by email, text message or pager provide immediate information on events such as a recloser lockout or low voltage/outage conditions.
- Device history logs all communications with equipment.
- Request equipment status and analog values at any time.
- Tools for communications diagnostics and data volume monitoring.
- Server authentication using 128-bit encryption key validated by VeriSign Trust Certificate
- E-mail, text messages and pager notifications are included at no extra cost
- PowerVista is available as a hosted application at the Sensus DA data center or can be placed in a customer data center

SCADA INTERFACE

All Sensus DA devices can be monitored and controlled through an existing SCADA or DMS system via DNP3.0/IEEE 1815 protocol.

- PowerVista application and SCADA-Xchange operate simultaneously.

See the SCADA-Xchange datasheet for more details.

Specifications

Processor

- 32 bit microcontroller, 72 MHz
- 8 MG non-volatile Flash memory
- 232 MB RAM

Communications

Three Serial Ports

- USB 2.0 compliant, full speed, local configuration port; supports MS Windows based local configuration and test program
- RS232 SCADA communications port, DB-9 female or terminal block; supports DNP or Modbus depending on model
- RS-232 Pass Through for IED maintenance port connection, DB-9 female

Cellular Data Network

- Two-way – all commands are acknowledged
- Transmit power: 1 mW to 1.2 W
- Frequency: 850/1900 MHz
- 50 Ohm SMA antenna connector

FlexNet Network

- Two-way – all commands are acknowledged
- Transmit power: 2 W
- Frequency: 900 or 400 MHz band, Primary licensed
- 50 Ohm SMA antenna connector

Operating Power

- 12-24VDC, 70mA typical, 0.6A max (< 0.5 sec.)

Environmental Data

- Operating temperature Range:
  -30º to +70ºC (Cellular)
  -40º to +70ºC (FlexNet)
- Humidity: 0% to 95% noncondensing
- Electrical Transient Immunity: ANSI/IEEE C37.90.1
- Surge Suppression: EN61000-4-4 & EN61000-4-5
- Radiated emissions: FCC Part 15 Class B, EN 55022

Enclosures

Standard enclosure features include:

- NEMA 1 rating
- Integrated mounting flanges
- Gray steel construction
- Dimensions: 5.6”H x 4”W x 1.7”D
- Optional NEMA 3R enclosure with 120VAC – 12VDC power supply; 11”H x 8.3”W x 3.3”D; 3 lbs

Model	Radio	Frequency	Protocol
DNP-RTM II-FLX900	FlexNet	900 MHz	DNP
DNP-RTM II-FLX400	FlexNet	400 MHz	DNP
MOD-RTM II-FLX900	FlexNet	900 MHz	Modbus
MOD-RTM II-FLX400	FlexNet	400 MHz	Modbus
DNP-RTM II-MA-FLX900	FlexNet	900 MHz	DNP
DNP-RTM II-MA-FLX400	FlexNet	400 MHz	DNP
MOD-RTMII-MA-FLX900	FlexNet	900 MHz	Modbus
MOD-RTMII-MA-FLX400	FlexNet	400 MHz	Modbus
DNP-RTMII-GSM	GSM/GPRS	850/1900MHz	DNP
MOD-RTMII-GSM	GSM/GPRS	850/1900MHz	Modbus
DNP-RTMII-MA-GSM	GSM/GPRS	850/1900MHz	DNP
MOD-RTMII-MA-GSM	GSM/GPRS	850/1900MHz	Modbus

Models

- Models with GSM/GPRS radios communicate using General Packet Radio Service (GPRS) over the AT&T GSM cellular data network. The units can be installed anywhere AT&T GPRS service is available, including roaming partners.
- Models with FlexNet radios communicate using packet data over Sensus FlexNet private networks. The units can be installed on any FlexNet system using RNI software version 2.1 or higher. For more information visit us at **www.sensus.com**.

See device drawing on back page.

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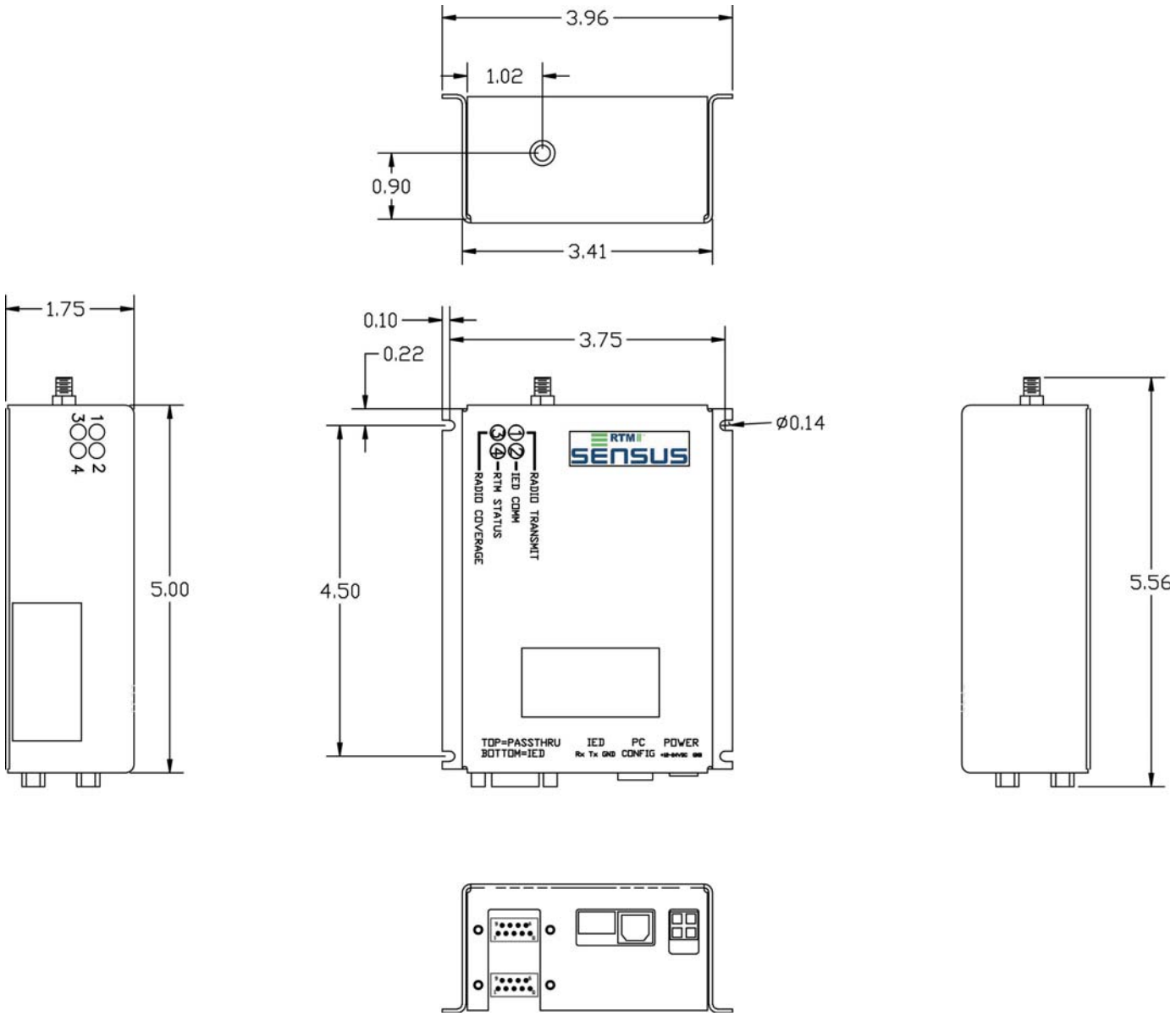

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