T866 MicroRTU™ (T866)
Wireless Monitor & Control

Description

The Sensus Distribution Automation (DA) T866 MicroRTU™ system is a cost effective solution for the monitoring, control and automation of remote equipment such as switches, reclosers, generators, voltage regulators, substations, pumps, lift stations, environmental remediation equipment, tower lights or any application requiring discrete inputs, outputs and analogs. The T866 system includes an integrated two-way radio. Models are available that communicate using cellular networks or Sensus FlexNet™ private radio networks.

Features

APPLICATIONS

The Sensus DA T866 MicroRTU system monitors both digital and analog inputs of the equipment to which it is connected. It reports events as they occur based on user defined trigger times and can be queried for status on demand. Output relays perform control actions which can be event driven from rules defined in Sensus' PowerVista™ applications. Easily and quickly installed, the MicroRTU system provides immediate access to the status of your equipment along with the ability to control it.

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

Data is available to utility SCADA systems through Sensus SCADA-Xchange™ or from PowerVista™ applications.

FEATURES AND BENEFITS

- Provides status monitoring of eight digital inputs and six analog inputs; six digital outputs are available for controlling equipment.

- Includes a control power AC Line Voltage Monitor to report under and over voltage conditions, as well as momentary and continuing power outages.

- Monitoring, control, and remote configuration options are accessible from the secure PowerVista applications or through an existing SCADA system using SCADA-Xchange™.

- Operating parameters are locally and remotely configurable.

- Automatic battery test for reporting low battery conditions

Communication is initiated three ways:
- Automatic report upon status change

- Time-scheduled reports from once every minute to once every 1000 hours in 1 minute increments

- Users may request reports through PowerVista applications or utility SCADA system

Remote Control and User Notification

PowerVista applications display the T866 digital and analog input status, perform control operations and configure rule-based actions. Examples include:

- Notify a designated person of a status change by email, pager or text messaging

- Send pre-determined control commands to the same or a different MicroRTU unit in response to a change in status

- Define a group of MicroRTUs for sending group commands

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

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Features

FEATURES AND BENEFITS
Continued

   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 hosted applications are available 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

Point Count
- 8 Digital inputs
  - 6 contact inputs
  - 2 AC voltage detects (present/absent)
- 6 Analog inputs
  - 4 Transducer inputs
  - 1 Dedicated temperature input
  - 1 AC Voltage monitor
- 6 Digital outputs
- 1 Battery monitor

Digital Inputs/Outputs
Digital Inputs
- 6 Dry contacts (12VDC whetting voltage provided by MicroRTU)
  - Reports the number of state changes per event
  - Individually configurable as 5-digit counters and/or timers
- 2 – 120 VAC detects (present/absent)

Digital Outputs
- 6 mechanical relays
  - Two Form "C" 30 A, 240 VAC; 20 A, 30 VDC
  - Four Form "A" 8 A, 240 VAC; 8 A, 30 VDC
- Momentary or continuous operation
- Local/remote switches enables/disables remote control and provide a local test mode

Analog Inputs
- 12-bit A/D conversion
- Software selectable input ranges
  - 0 – 5 VDC
  - 1 – 10 VDC
  - 0 – 1 mA DC
  - 4 – 20 mA DC
  - 0 – 10 VAC, true RMS
  - Four set points with a trigger time for each input
- +12VDC, 100mA is provided for powering analog sensors
- 120 VAC control power monitoring

input is standard on all AC powered models
- Over and under voltage monitoring
- Outage and power-on reporting
- Configurable over and under voltage thresholds and trigger times

Communications
Local Serial Port
- USB 2.0 compliant, full speed
- Includes Sensus Distribution Automation local configuration and test program

Cellular Data Network
- Two-way communications, all commands are acknowledged
- Transmit power: 1mW to 1.2W
- Dual-band, supporting GSM/GPRS 850/1900MHz
- Dual-band, supporting CDMA/1XRTT 850/1900MHz
- 50 Ohm SMA antenna connector
- Flexible, 1/2 Wave, 3.0dBi antenna included

FlexNet Network
- Two-way communications, all commands are acknowledged
- Transmit power: 2W
- Frequency: 900MHz band, Primary licensed or 400MHz band for international applications
- 50 Ohm SMA antenna connector
- Flexible, 1/2 Wave, 3.0dBi antenna included

Operating Power
- 100 – 135 VAC, 60 Hz (Standard)
- 4.5 A-Hr battery backup included for outage reporting; 24 hours run-time with ambient temperature > 0ºC

Environmental Data
- Operating Temperature Range: -30º to +70ºC (cellular) -40º to +70º C (FlexNet)
- Electrical Transient Immunity:

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SPECIFICATIONS
Continued

ANSI/IEEE C37.90.1; ANSI/IEEE 62.41, 6kV
- Surge Suppression: EN61000-4-4 & EN61000-4-5
- Radiated Emissions: FCC Part 15 Class B, EN 55022

Enclosures

The standard enclosure is fiberglass reinforced polyester. Features include:

- NEMA 3R enclosure rating
- Integrated mounting flanges
- Hinged door with padlocking provisions
- Two conduit compatible cable entry holes
- Dimensions: 10.5" x 8.5" x 4.5"

- Weight: 12 lbs

| Model	Radio	Frequency	Enclosure
T866-GSM-FRP	GSM/GPRS	850/1900MHz	Non-metallic
T866-CDMA-FRP	CDMA/1XRTT	850/1900MHz	Non-metallic
T866-FLX9-FRP	FlexNet	900MHz	Non-metallic
T866-FLX4-FRP	FlexNet	400MHz	Non-metallic

MODELS

- Models with GSM/GPRS radios communicate over the AT&T cellular data network. The units can be installed anywhere AT&T GPRS service is available, including their roaming partners.
- Models with CDMA/1XRTT radios communicate over the Aeris.net CDMA cellular data network. The units can be installed anywhere Aeris.net service is available, including their roaming partners such as Verizon, Sprint and other regional CDMA carriers.
- Models with FlexNet radios communicate over Sensus FlexNet private networks. The units can be installed on any FlexNet system using the latest RNI software version.

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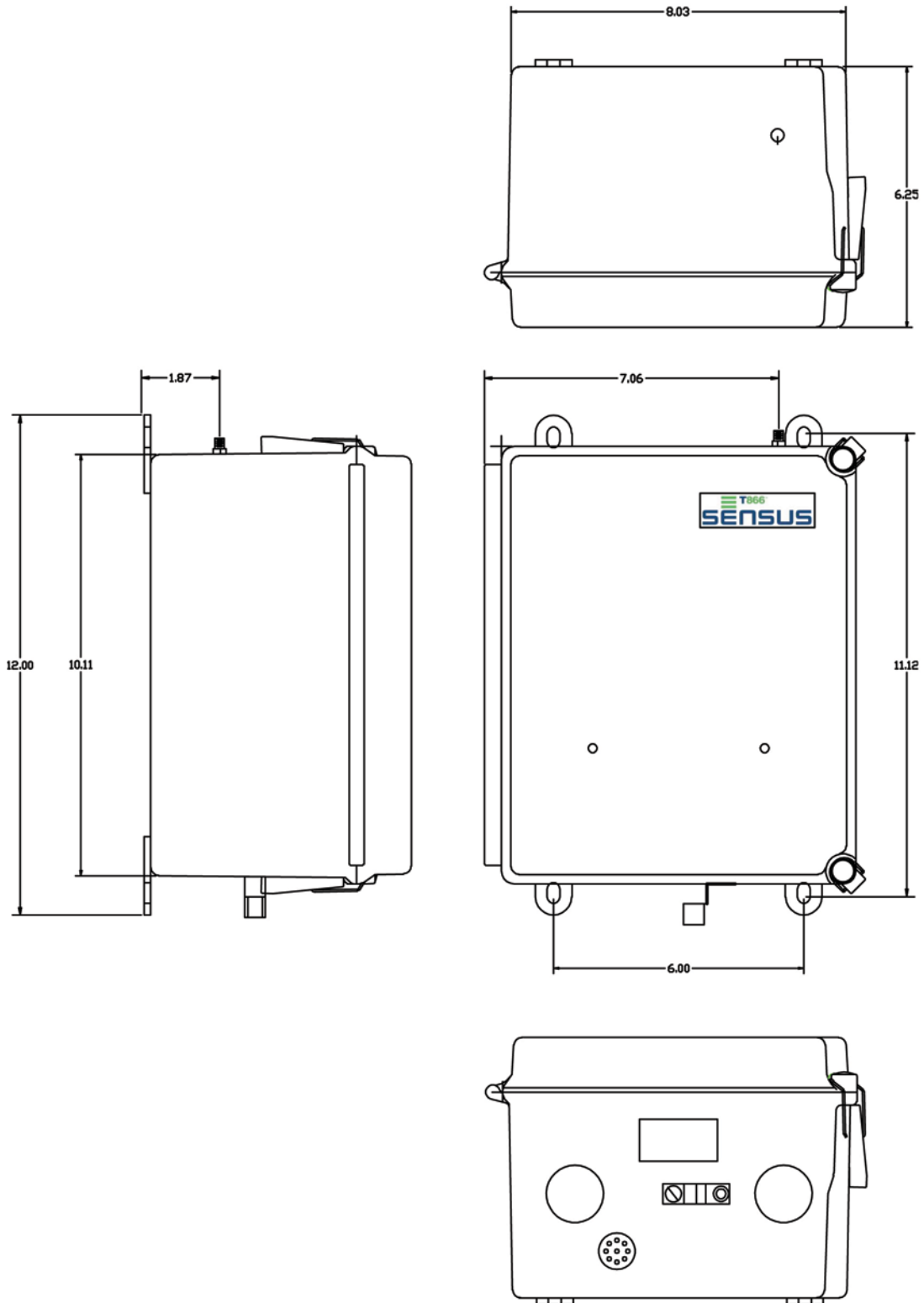
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