



Sensus RTM II / RTM II+

Intelligent, secure, and fast grid communications

The Sensus Remote Telemetry Module™ II and II+ (RTM II/RTM II+) enable remote monitoring and control of smart SCADA field devices using the Sensus FlexNet® communication network or cellular communication networks. Both units are intelligently engineered to optimize communication traffic and provide real-time information to utilities.

These intelligent devices act as a communication gateway—easily connecting SCADA and Distribution Automation (DA) field devices via serial or Ethernet interfaces. By incorporating industry standard Modbus and DNP3/IEEE 1815 SCADA communication protocols, both devices are easily integrated with third-party Intelligent Electronic Devices and SCADA systems giving you end-to-end interoperability.

FEATURES

- Remote two-way monitoring and control over FlexNet and/or 4G/LTE cellular data networks
- Interoperability: Supports over a hundred different IED integrations
- Highly secure, encrypted SCADA interface

BENEFITS

- Real-time status of IEDs with configurable reporting, events, and alarms
- Communicates with 100+ IED application types from all leading manufacturers
- Communicates via standard RS-232 serial connection, RS-485 isolated serial connection, or Ethernet connection with IEDs
- Simple and easy installation with plug-and-play integration kits for most popular IEDs, including specific device point maps/profiles

Applications

The units are ideally suited for smart grid distribution automation applications requiring interoperability with critical assets such as reclosers, capacitor banks, distribution switches, faulted circuit indicators, voltage regulators, distributed generation, load control, and distribution substations. Similarly, the RTM II/RTM II+ can also integrate other intelligent SCADA controls to support water and gas automation applications.

- FlexNet® Model: Communicates using primary-use licensed spectrum over the Sensus FlexNet communication network. The units can be installed on any FlexNet system that is configured to support the AutomationControl™ application platform.
- Cellular Model: Communicates over the AT&T® 4G/LTE or Verizon™ 4G/LTE cellular data networks. The units are configured to support AutomationControl and can be installed anywhere in the United States where AT&T or Verizon service is available, including their roaming partners.

Communication

Communication is initiated in three ways:

- Automatic reporting upon digital and analog changes
- Configurable time-scheduled reports
- On-demand reporting through AutomationControl or the utility SCADA system

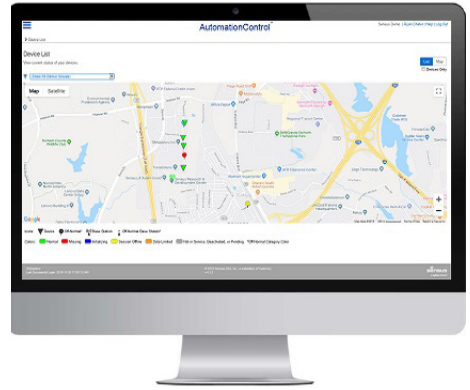
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AutomationControl

AutomationControl is a browser-based Software as a Service solution for real-time management of distribution and SCADA system assets. Through this platform, utilities can easily control intelligent communication devices giving operators the insight needed to effectively manage critical infrastructure.

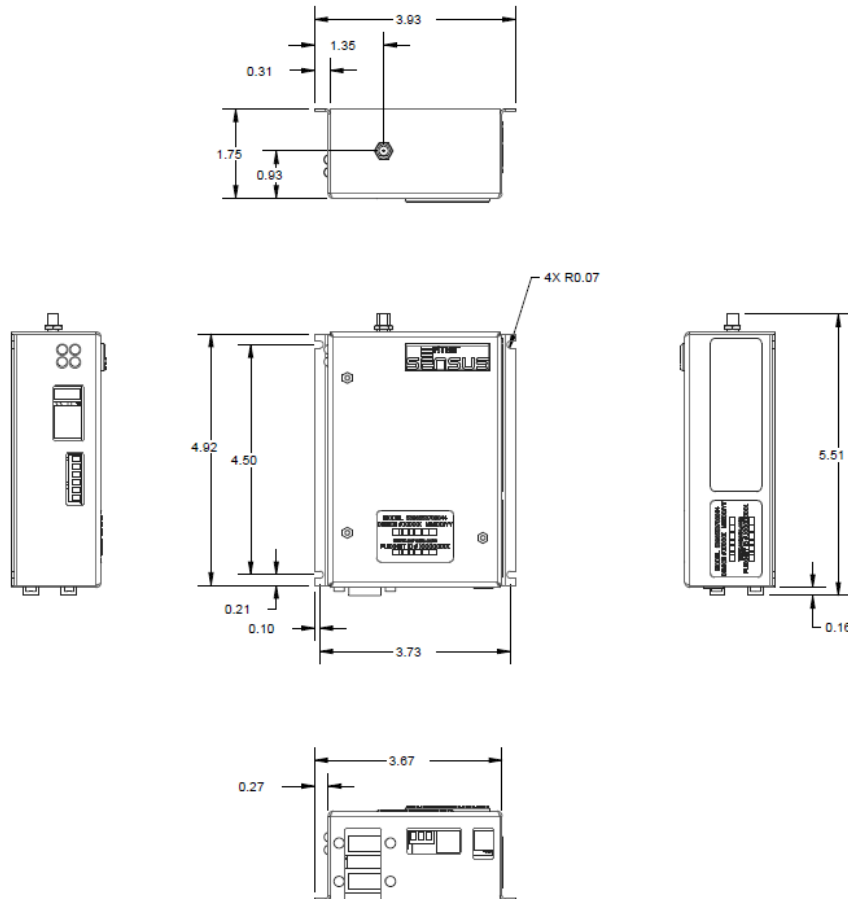
Distribution, operations, maintenance and management personnel all appreciate the intuitive AutomationControl interface. The dashboard provides a real-time snapshot of system performance—turning low-level insight into high-level consumption. The interface visualizes your system, devices and network to simplify what was once complex.



To leverage automation, users can program autonomous control actions and commands to occur in the field. Intelligent field devices are then able to take action without having to wait for a utility operator to issue a command. If an action fails for any reason, the system has been designed to send notifications to a set of users.

With AutomationControl, utilities are able to securely control any distribution asset and deploy a deeper level of intelligence down to the edge.

The drawings below show an RTM II+ FlexNet model. All measurements are in inches with a +/- 0.01 inch tolerance.



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PRODUCT

Product	Model	Radio	Frequency	RS-232 Serial Port	RS-485 Serial Port	Ethernet
RTM II	539.65.537.00045	FlexNet	900 MHz	✓		
	539.65.537.00051	AT&T cellular 4G (LTE) with 3G fallback	700/850/1700/1900 MHz	✓		
	539.65.537.00058	Verizon cellular 4G (LTE)	700/850/1700/1900 MHz	✓		
RTM II+	539.65.537.00044	FlexNet	900 MHz	✓	✓	✓
	539.65.537.00050	AT&T cellular 4G (LTE) with 3G fallback	700/850/1700/1900 MHz	✓	✓	✓
	539.65.537.00057	Verizon cellular 4G (LTE)	700/850/1700/1900 MHz	✓	✓	✓

COMMUNICATIONS

General	Two-way communication	All communications are acknowledged for reliability
	Protocols	DNP and Modbus
Serial Ports	Local Configuration Port	USB 2.0 compliant; supports Microsoft® Windows® based local configuration and test program
	SCADA Communication Port	RS-232, DB-9 female or terminal block; supports DNP or Modbus
	Pass Through	RS-232, DB-9 female; IED maintenance port connection
	Isolated Serial Connection	RS-485
Ethernet Port (RTM II+ only)	SCADA Communication Port	RJ-45 female; supports DNP or Modbus
FlexNet network	Transmit power	2W
	Frequency	900 MHz, primary licensed
	Antenna	SMA antenna connector
Cellular network	AT&T	4G/LTE with 3G fallback
	Verizon	4G/LTE
	Transmit power	3G: 2W (GSM), 0.25W (WCDMA) 4G: 0.2W (LTE)
	Frequency	3G: 800/1900 MHz 4G: 700/850/1700/1900 MHz
	Antennas	2 SMA antenna connectors (Main and Diversity)

PROCESSOR

32 bit microcontroller running at 72 MHz
8 MB non-volatile Flash memory
32 MB SDRAM

ENVIRONMENTAL DATA

Operating temperature	FlexNet: -40° to 185°F (-40° to 85°C) Cellular: -40° to 158°F (-40° to 70°C)
Humidity	0% to 95% non-condensing
Radiated emissions	FCC 47 CFR Part 15B and ICES-003

ENCLOSURE

Intrusion rating	NEMA 1R or IP 20
Mounting	Integrated mounting flanges
Construction	Gray steel
Dimensions	See attached drawings



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