

# T646 MicroRTU™ (T646)

## Datasheet

### Wireless Monitoring and Control

The Telemetric T646 MicroRTU is a cost effective solution for monitoring, control and automation of remote equipment such as switches, reclosers, generators, voltage regulators, substations, pumps, environmental remediation equipment, tower lights or any application requiring discrete inputs, outputs and analogs. The T646 includes an integrated cellular radio that communicates using the GSM or CDMA cellular networks. No license or local cellular account is required.

Data is available to utility SCADA systems through Telemetric's SCADA Xchange™ or from Telemetric's PowerVista™ applications.

The T646 monitors both digital and analog inputs. It reports events for real-time information and can be queried for status on demand. Output relays perform control actions and they can be event driven from rules defined in Telemetric's hosted PowerVista™ applications. Easily and quickly installed, the MicroRTU provides immediate access to your equipment. The T646 is available in the following models:

Model	Radio	Enclosure
T646-GSM-NEMA3R	GSM/GPRS 850/1900MHz	Non-metallic
T646-GSM-MTL	GSM/GPRS 850/1900 MHz	Metal
T646-CDMA-NEMA3R	CDMA/1xRTT 850/1900MHz	Non-metallic
T646-CDMA-MTL	CDMA/1xRTT 850/1900 MHz	Metal

- 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 their roaming partners.

- Models with CDMA/1xRTT radios communicate using 1X packet data over the Aeris.net cellular data network. The units can be installed anywhere Aeris.net service is available.

### Features and Benefits

- Provides status monitoring of six digital inputs and four analog inputs; six digital outputs are available for controlling equipment.
- Includes an 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 Telemetric PowerVista applications or through an existing SCADA system using Telemetric's SCADA-Xchange™.
- Operating parameters are locally programmable and remotely selectable.



### Communication is initiated three ways:

- Automatic report upon status change
- Time-scheduled reports from once every 15 minutes to once every 240 hours (10 days)
- User requests reports through Telemetric PowerVista applications or utility SCADA system

### Remote Control and User Notification

PowerVista applications display the T646 data, perform control operations and configure rule-based actions.

Examples include:

- Notify a designated person of a reported event by email, pager or text messaging
- Send pre-determined control commands to the same or a different MicroRTU in response to a change in status



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- Define a group of MicroRTUs for sending group commands

## PowerVista™ Applications

- Each customer has a secure account that provides access to their equipment
- Data is secure and password protected
- 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 Telemetric data center or can be placed in a customer data center

## SCADA Interface

All Telemetric devices can be monitored and controlled through an existing SCADA or OMS system via DNP3. See the SCADA-Xchange datasheet for more details.

# Specifications

## Point Count

- 6 Digital inputs
- 4 Analog inputs
- 6 Digital outputs
- 1 AC voltage monitor (on AC powered models)
- 1 Battery monitor Digital I/O

## Digital Inputs

- Dry contact and 120 VAC sensing
- Default configuration reports on change of state
- Reports the number of state changes per event
- Individually configurable as 5-digit counters and/or timers

## Digital Outputs

- 6 Form “A” mechanical relays

- Two 30 A, 240 VAC / 20 A, 30 VDC
- Four 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
- +12V 100mA output is provided for powering analog sensors
- Jumper selectable input ranges
  - 0 – 5 VDC
  - 0 – 1 mA
  - 4 – 20 mA
  - 0 – 10 VAC, true RMS
  - Three set points with a trigger time for each input
- 120 VAC 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
- Analog and AC line voltage measurements can be reported as present values or average values

## Communications

### Local Serial Port

- RS-232, 9600 bps
- Includes a Windows based local configuration and test program

### Cellular Data Network

- Transmit power: 1mW to 1.2W
- Dual-band, supporting 800/1900 MHz
- 50 Ohm SMA antenna connector
- Flexible, 1/2 Wave, 3.0dBi antenna included

## Operating Power

- 100 – 135 VAC, 60 Hz (Standard)

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- 12, 24, 48 & 125 VDC (Optional)
- 4.5 A-Hr battery backup included for outage reporting;  
24 hours run-time with ambient temperature > 0°C

### Environmental Data

- Operating Temperature Range: -40° to +70°C
- Electrical Transient Immunity per ANSI/IEEE C37.90.1-2002

### Enclosures

The standard fiberglass reinforced polyester enclosure features include:

- NEMA 3R enclosure rating
- Integrated mounting flanges
- Hinged door with padlocking hasps
- Two conduit compatible cable entry holes
- Dimensions: 10.5" x 8.5" x 4.5"
- Weight: 12 lbs

### Additional Product Configurations

- Reduced input/output configurations
- AC Detection on digital inputs 3 through 6
- Metal enclosure
- Variety of antenna options



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