

TC012 MicroRTU™ (TC012) Datasheet

Capacitor Bank Monitor and Control

The Telemetric TC012 MicroRTU (TC012) is a cost effective solution for monitoring and controlling fixed or switched capacitor banks. The TC012 includes an integrated cellular radio that communicates using the GSM or CDMA cellular data networks.

The Telemetric TC012 MicroRTU transmits data using General Packet Radio Service (GPRS) technology over the AT&T GSM cellular data network. The units can be installed anywhere the AT&T GPRS service is available, including their roaming partners. No license or local cellular account is required. Data is available to utility SCADA systems through Telemetric's SCADA-Xchange™ or from Telemetric's hosted PowerVista™ applications.

Model	Radio
TC012-GSM-MTL	GSM
TC012-CDMA-MTL	CDMA

- 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 capacitor bank control through two 30 Amp relays. After a switching operation, the acknowledgement report includes the AC line voltage, open/close status, and the capacitor bank neutral current.
- Capacitor bank neutral current is measured with a 0-100A current sensor. A neutral current of zero indicates that the installation is switched out of service. Normal neutral current (a nominal value above zero) when the bank is closed indicates the bank is switched in service

and the installation is operating as expected. A neutral current that is higher than average but below a predefined limit indicates the presence of high harmonic current or resonant conditions, which may indicate a potential problem. A higher, pre-defined level of current indicates a blown fuse or other serious problem.

- Easily accessible local/remote switch disables remote operation; the position of the switch is reported when changed.
- Local control delay gives operators time to move a safe distance from the equipment before the capacitor bank is switched.
- Pending operation indication warns operators of any pending bank switching operations.
- An Amphenol connector allows easy neutral current sensor installation.
- The AC Line Voltage Monitor reports under and over voltage conditions, as well as momentary and continuing power outages.
- Includes Telemetric's PowerVista application to provide monitoring, control, and configuration options. The PowerVista applications can be used in parallel with SCADA-Xchange.
- All setpoints and operating parameters are user programmable.



Communication is initiated in three ways:

- Automatic report upon status change
- Time-scheduled reports from once every hour to once every 240 hours (10 days) in 1 hour increments
- User requests reports through Telemetric PowerVista applications or utility SCADA system

Remote Control and User Notification

PowerVista applications can be used to configure rule-based actions and user notifications that are performed based on the TC012 reports. Examples include:

- Notify a designated person of the reported event
- Send pre-determined control commands back to the TC012, or to a different MicroRTU
- Notify a customer by e-mail, pager or text messaging with data from the TC012

PowerVista™ Hosted Application

- 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

SCADA Interface

With Telemetric's SCADA-Xchange™, a SCADA system can communicate with the TC012 using DNP3. This allows the SCADA system to monitor the TC012's line voltage, neutral current, and capacitor bank switch position, and to send control commands to open or close the capacitor bank. See the SCADA-Xchange datasheet for more details.

Specifications

Point Count

- 1 Analog input
- 2 Digital outputs
- 1 AC voltage monitor
- 1 Battery monitor

Digital I/O

Digital Outputs

- Two Form "A" mechanical relays, 30-Amp, 240 VAC inductive / 20-Amp, 30 VDC
- Momentary operation
- Local/remote switch enables/disables remote control

Analog Input

- 12-bit A/D conversion
- 0 – 10 VAC, true RMS
- Three set points and trigger times
- 120 VAC control power monitor is standard
 - Over and under voltage monitoring
 - Outage reporting
 - Configurable over/under voltage thresholds and trigger times

Communications

Local Serial Port

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

Cellular Data Network

- Two-way communications– all commands are acknowledged
- Transmit power: 1mW to 1.2W
- Dual-band, supporting GSM/GPRS 850/1900MHz
- End-user license/local cellular account not required
- 50 ohm SMA antenna connector

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- Omni, ½ Wave, 3 dBi antenna included

Operating Power

- 100 – 135 VAC, 60 Hz
- 12, 24 and 48VDC optional
- 4.5 AH battery backup included – only required for outage reporting

Environmental Data

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

Enclosures

The standard enclosure features include:

- Gray steel, NEMA 3R rating
- Hinged door with padlocking hasp
- Three conduit compatible cable entry holes on the box bottom
- Dimensions: 10.5” x 8.5” x 4.5”
- Weight: 17 lbs

Additional Product Configurations

- Additional input/output configurations
- Non-metallic enclosures
- 4-jaw socket mounting
- A variety of antenna options



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