

How can you help prevent electrical equipment downtime?

Wireless Temperature Monitoring System

Monitor Temperatures Where Traditional Infrared Thermography Cannot be Used

The Wireless Temperature Monitoring System (WTMS) provides 24/7 online temperature monitoring of critical connection points in electrical equipment. Continuous monitoring provides the means to evaluate the equipment's current condition and detect abnormalities at an early stage. Utilizing wireless technology eliminates the need for special cables and provides lower installation costs than other types of online condition monitoring equipment. WTMS allows for easy field installation of wireless sensors into LV and MV equipment. Since sensors can be placed in locations usually not accessible with an infrared camera, WTMS can either complement or replace an infrared thermography program. Sensors can also be installed on equipment with high arc flash ratings, allowing equipment condition to be monitored without a risk of danger to personnel or equipment.

Benefits of WTMS

- Provides continuous online monitoring of critical connection points
- Monitors multiple points simultaneously
- Detects abnormal conditions in a timely manner
 - Early warning alarms help prevent costly downtime
 - Initiate actions to prevent future failure
- Extends maintenance intervals
- Easy and low-cost installation for wireless sensors
- Open communications network
 - Compatible with Modbus® and PowerLogic®

How WTMS Works

Temperature data is transmitted from the sensors to a nearby receiver via spread spectrum radio frequency signals. The receiver is connected to a computer via serial or Ethernet. The data can be compiled, analyzed and reported by a dedicated software package or via a higher-level program with Modbus TCP connectivity.



Sensors installed in LV and MV equipment monitor points which are hard to reach or do not have visual access and transmit to receivers up to 100 ft. away.



by Schneider Electric

System Features

- Low-cost to install
 - No wires or input modules needed
- Small, wireless, dielectric sensors
- Frequency range 902-928MHz
- Frequency of sensor transmission increases with fast temperature rise
 - Typical signal reception of once every 5-10 minutes
- Signal receiving has a typical range of up to 100 ft. with sensors mounted in equipment and up to 500 ft. in open air
- Receivers read the signals from up to 100 sensors within their operating range
 - Additional receivers can be utilized when there are a greater number of sensors
- A wireless extension receiver can double the range of a primary receiver.
- Receiver connectivity options include RS-485, Ethernet 802.3 and Modbus TCP
- Logging and reporting via standalone software, Powerlogic SMS or ION Enterprise® or BMS / SCADA software

Why is Temperature Monitoring Important?

Conduction problems caused by loose connections or deterioration of contact surfaces result in a local temperature rise, which contributes to the reduction of the contact quality. Thermal runaways induced by conduction problems deteriorate the insulating material and cause disruptive dielectric discharges resulting in arcing faults. The ability to continuously monitor the condition of energized equipment (on-line monitoring) provides operation and maintenance personnel with a means to:

- 1) Determine the operational status of equipment
- 2) Evaluate present condition of equipment
- 3) Detect abnormal conditions in a timely manner
- 4) Initiate actions to prevent possible forced outages

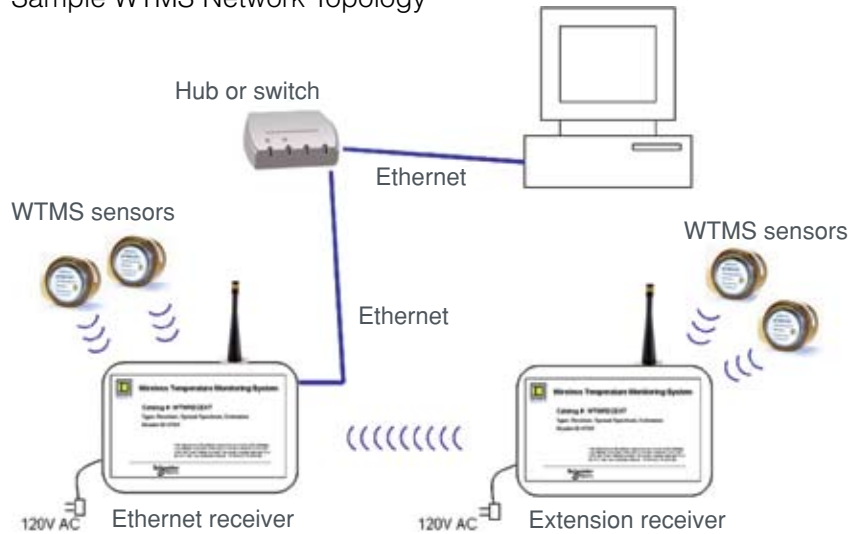
The consequences of such faults are serious enough to justify the efforts to install a temperature monitoring system to help prevent electric equipment from disaster.

For more information call 1-888-SQUARED or visit us online at www.SquareD-Services.com

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Sample WTMS Network Topology



WTMS Sensors: Specifications

- Designed to withstand high temperatures in switchgear
 - Calibrated in wide temperature range
 - 0° to 150°C
- Operates in direct contact with the surface, for both LV and MV class equipment, up to 50 kV
- Sensor enclosure is non-conductive, high T and UL rated
- Sensor size: D=1.5" (40 mm) and H=1" (25 mm)
- Moisture resistant for humid and corrosive environments
- Uses high temperature, 3V Li battery
 - Battery life is up to 5 years
 - Battery can be replaced during regular maintenance outage



Component Ordering Information

| Item | Part Number |
|---|-------------|
| Temperature Sensor | WTMSSENS |
| Receiver - Serial RS485 | WTMRECSSTS |
| Receiver - Ethernet 802.3 | WTMRECSSTE |
| Receiver - Modbus TCP | WTMRECSSTM |
| Extension Receiver | WTMRECEXT |
| TempAssure Local Client, Software for Local Install | WTMSFTW |

Why Choose Square D Services?

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