REMOTE FACILITY MONITORING SYSTEM

Overview

This is a web-based SCADA system designed for monitoring of environmental and electrical parameters of remote facilities like data centers. It is combined with remote monitoring of the electrical network apparatus, operating under a single and integrated application software and a state-of-art field data acquisition hardware capable of implementing the functions internally from a single box. The SCADA part is implemented using third-party web technologies like ASP.Net along with NI Measurement Studio. The RTUs are based on National Instrument's state of the art industry standard hardware and software technologies.

Software Functions

- Real-time monitoring of voltage and current
- Real-time calculation of:
  - Power factor
  - Harmonic distortion (THD)
- Real-time monitoring of temperature, humidity and HVAC status
- Average, minimum and maximum value calculation of all measured data over various periods of time
- Setting configuration of RTU parameters
- Local web-interface on RTUs
- Local data logging in RTUs up to 6 months
- Data storing into database
- Alarm and events handling and monitoring
- Historical data
- Report generation
- Different user authentication levels

System Components

- Central/SCADA Web Server
- Central Database Server
- Web Clients
- RTUs (can be extended up to 100 RTUs)

Benefits

- The panel is strictly protected from dust, water and also has a lock with a key
- Remote monitoring data center parameters in real-time
- Prompt notification about alarms for fast and effective maintenance
- Capable of any standard communication media (3G, fiber optic, etc.)
- Reduces maintenance cost and increases effectivity
- Reduces the risk of power blackouts due to on-time maintenance and fast fault detection
- Ability to make fault predictions based on historical data statistics

Specifications

Parameter	Value
Number of RTUs	Unlimited
Communication Physical Layer	Ethernet, Wireless
Communication Application Layer	NI Shared Variable Engine
Voltage Analog Inputs	6-channels, 300Vrms, 50kS/s, 24-bit, simultaneous
Current Analog Inputs	8-channels, 5Arms, 50kS/s, 24-bit, simultaneous
Digital Inputs	8-channels, 24 V up to 60 V, sinking/sourcing
Analog Inputs	8-channel, ±60 V, 800 kS/s
SCADA Web Server	Based on NI RMC server, with NI MKD-1117 display
Central Database Server	Based on NI RMC server, with NI MKD-1117 display

Software Screenshots