

Sentor Remote Monitoring and Control Systems

Sentor Application White Paper

Remote Tower Sites - Control and Monitoring of Critical Infrastructure



Sentor is a complete Tower Site Automation and Control System

Remote Tower Site Equipment Monitoring and Control

Most Tower Site operators are fully aware of the short comings of Monitoring Systems on offer that claim to monitor their equipment Alarms and deal with these issues in a timely and cost effective manner.

Almost ALL of the Monitoring Systems on offer are a compromise and have been adapted from other systems such as basic factory floor SCADA systems or from computer based network systems running SNMP (Simple Network Management Protocol).

Tower Site Monitoring and Control Systems built by industry people who have spent most of their lives in the Radio/Wireless Industry are extremely rare. Sentor is one of these systems.

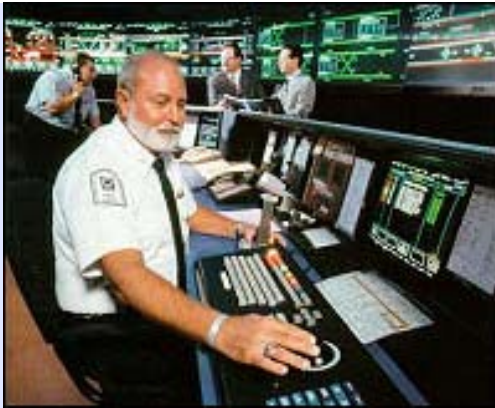
Sentor started business in the early 90's and was designed by Radio Communications Engineers who realized that there was no system on the market that provided FULL Remote Monitoring and Control of all equipment on these distant sites.

The equipment and services that needed to be interfaced to Sentor and be provided by Sentor was wide ranging and extremely difficult and expensive to accomplish.

Tower Sites have a huge amount of expensive equipment installed and ALL of these systems are Monitored and Controlled intelligently by Sentor. Just some of the systems include

- Tower Light Alarm Monitoring
- Remote Security and Access Control
- Radio Forward & Reflected Power (VSWR)
- Received Signal Strength (RSSI)
- Automatic Transmitter/Antenna Changeover
- Antenna Performance and Down tilting
- Co-Axial Cable Health
- Battery and Rectifier Health
- Radiation Measurements
- Site Power Health (AC/DC/Solar)
- Automated Backup Power Cutover
- Fire and Smoke Detection and Alarms
- Temperature Control (Air Conditioning)
- Lighting Control
- Fully Automated Alarm Calls
- Remote Computer Control & Programming
- Web Enabled TCP/IP and Ethernet
- FULL Server and Monitoring Service

These are only a few things that Sentor is cable of accomplishing. The case studies are endless as many customers have asked Sentor to Monitor and Control many applications such as Environmental Monitoring, Agriculture Solutions, Gates, Water Reticulation and Management and Building Automation just to name a few.



How does Sentor do it ?

Sentor built its own specialist hardware and software to be able to accomplish these feats. In fact Sentor was the very first Controller to be Windows® compatible way back with Win 3.1. Since then we have moved with the times now being compatible with the latest Win releases such as XP, VISTA, WinCE and even Linux. New Hardware is always being developed now using the Intel Pentium® PC 104 range of fast and reliable processor engines. Sentor tries to make all future releases of Hardware and Software compatible with previous models.

Sentor hardware is a fully stand alone intelligent and programmable input/output automation controller which incorporates Fully Programmable Analogue and Digital Inputs and Outputs (see spec sheet for details). The inputs and outputs are controlled by the SENTOR FUZZY LOGIC SOFTWARE which uses a drag and drop programming method with plain English statements called Pro-Actions or Scenarios. An example of the code may look like this,

"If SECURITY is BREACHED then CALL POLICE and SET SIREN to ON and SET VIDEO to ON".

This type of easy programming language system allows company technicians or remote control room staff to easily re-set thresholds and change parameters when required.

By utilizing the GUI (Graphical User Interface) a fully active picture is seen showing live bitmap Icons and actual readings of Voltages, Temperatures, Power Readings and even a full event log all recorded and downloaded automatically to the remote server located at one of Sentor's Monitoring and Control Centers. Larger customers may want their own Sentor Server which is available on request however most customers only require a dedicated Terminal attached permanently to the Remote Server via the Internet. This also means that any technician in the field can log into the server over the internet from anywhere with a SSL socket (Secure Socket Link) and manually fix a site without the need to go there.

HUGE SAVINGS

The site maintenance costs drop rapidly and the up time increases the moment Sentor is installed. For Cellular operators this is absolutely critical to the revenue base of the company. Indeed Sentor pays for itself within a very short period of time.



Some customers Include Motorola USA, LA Transit Authority, Telstra Australia, Lattice Towers USA, Transgrid Electricity Australia, Lawrence Livermore National Labs (USA .Gov), City of Corona CA, Geauga County Ohio.

STOP PRESS

Sentor Develops Multiple Protocol Converter System

Sentor can now monitor Multiple Devices for their alarms directly from the existing on site equipment via the serial ports. Providing the serial protocol for that equipment is available Sentor can build a Converter to monitor ALL alarms.

This means that Sentor can simultaneously monitor Multiple Transmitters & Receivers, Tower Light Controllers, Rectifiers, Generators, GPS Clocks, Air Conditioners, Fire Panels, Security Systems, Access Control and any other device that is located on any Tower Site.

We connect all serial ports to a common box (up to 32 ports) which then routs all serial alarms to Sentor via an alarm lookup table. This box also converts Serial to Ethernet which allows the vendor software to address each device for individual programming needs via the internet.

Then we send the data and alarms back to the Server which automates the Alarms to the correct people in the field. The Server if required automatically sends the Control Centre the Alarms in SNMP or other formats.

Some Protocols are SNMP, DNP3, TCP/IP, Modbus, Motorola RSS Weigand (Security Protocols) and many others.

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