



WATCHDOG™ II MESH

Wireless Remote Monitoring System

APPLICATIONS

- Remote monitoring of rectifiers and test points
- Initiate/schedule group interruption cycles
- Monitor multiple rectifiers (tank farms, terminals, multiple negatives) with one Watchdog system
- Monitor valve positions, pressure, tank levels and pumps

FEATURES

- “Wireless Mesh Technology” provides protection from lightning and power surges
- User defined automatic rectifier and test point readings
- Alarm and return to normal notifications via e-mail and/or text message
- GPS synchronized interruption with current sensing
- Reconfigure units from the Watchdog user interface
- Global communications to Watchdog systems via cellular or satellite telemetry
- Easy to use web interface
- Power via AC mains, low voltage AC or DC
- Firmware reprogrammable over the air (cellular)
- Monitors up to sixteen wireless analog channels, one 4-20mA or 0-5 volts analog input, five digital inputs and one digital output
- Modbus interface for SCADA systems
- AC mains on/off detection



- **Wireless, Built-to-Suit Design**
- **Two Way Cellular or Satellite Communications**
- **Setup and Reconfigure Units From Your Computer**
- **Import Data Into Compliance Reporting Software**

The Watchdog Mesh system is a comprehensive, turn-key solution to pipeline integrity management. The patented design features “Wireless Mesh Technology” that virtually eliminates lightning damage to the system. The Watchdog system communicates with one or more wireless “smart node” sensors and/or interruption controllers at a range up to 300 feet.

By providing unparalleled deployment flexibility, users can economically monitor one or more rectifiers at terminals or tank farms, on pipelines and well casings, or on ICCP (impressed current cathodic protection) protected piers and bridge decks. Start with simple volts/amps rectifier monitoring and add GPS synchronized interruption or wireless channels to monitor multiple negative current shunts at any point.

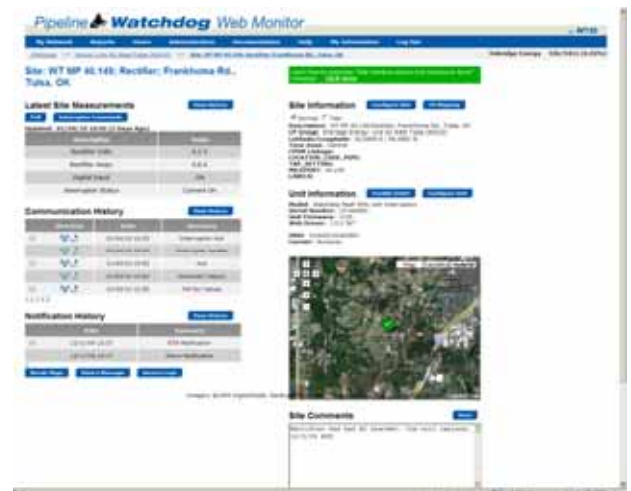
The powerful web interface simplifies multiple rectifier GPS-synchronized interruption, group polling, and automatic compliance report generation.

Product Specifications

Operating Environment	Temperature: -20°C to +70°C Humidity: 0 – 95% non-condensing Enclosure rating: NEMA 4X
Power	Input– 115/230 Vac, 50-60 Hz or 11-35 Vdc or 13-25 Vac for “Always On” operation
Size	Standard Option: 6” (15.2 cm) X 8” (20.3 cm) X 4” (10.2 cm) Integrated Option: 16” (40.6 cm) x 14” (35.6 cm) x 6” (15.2 cm)- recommended for systems that include an interrupter module
I/O	Inputs- 4 dry-contact digital, 1 digital pulse counter, 1 analog (4-20mA or 0-5V) Outputs– 1 digital for relay control (125mA maximum sink current) Up to 16 wireless channels can be linked to one base station
Communications	GSM/GPRS digital cellular using TCP/IP or SMS Inmarsat (geo-stationary satellite network) Isat M2M Modbus (RS232) RTU slave connection for use with customer supplied SCADA data radio
Wireless “Smart Node” Input Sensor	3 channel analog input with independently assignable input ranges Voltage range +/- 100 Vdc, current range +/- 100m Vdc Structure potential range +/-10V DC, input impedance > 10MΩ Field sensing AC voltage detection probe input Enclosure size: 5.5” (14 cm) x 2.5” (6.3 cm) x 1.2” (3 cm), ABS-94 flame retardant Surge protection: Wireless mesh total isolation system, normally open measurement relays and MOV's 300ft (100 m) line-of-sight range to Watchdog base station
Interrupter Module	GPS synchronized Syncs with all popular portable interrupters Relay options: 100 Amp mercury relay Solid state system



Optional integrated enclosure with base station, Smart Node, interrupter and 100A Hg mercury relay



*U.S. Patent number 7,317, 321 and others pending