EAGLE EYE POWER SOLUTIONS

Vigilant Battery Monitoring System for Telecom

Product Overview

The Eagle Eye Vigilant Battery Monitoring System is designed for monitoring telecommunications batteries, in both central offices and remote sites. It is compatible with all VLA, VRLA, and NiCad battery configurations and sizes. Key battery parameters are measured, including string voltage, float current, cell voltage, cell resistance, connection & terminal resistance, post & ambient temperature, and ground fault status.

Meaured parameters are used in machine-learning algorithms to detect **Cell Condition**, **Battery State of Health (SoH)**, and **Battery Risk Factor (RF)**. These parameters, new to the battery monitoring industry, provide accurate analysis that is unique to each individual battery monitored.

Key Features

- Monitor all systems remotely through any web-browser
- Vigilant sensors connect to every battery post, allowing precise measurement of cell voltage, cell resistance, and connection resistance
- Measure true float current per string in milliamps (mA)
- Proprietary algorithms provide complete risk factor analysis with projected end of life
- Watchdog circuits for notification of hardware failure
- Automatically record discharge events in a saved log
- Monitor up to 8 strings with a single Vigilant system
- Measure cells/units up to 16V nominal
- Installation to battery while online for most battery configurations

Battery Management & Communications

- Built in web-server with user-friendly GUI
- Accessible via IP address in any browser over network
- Fleet management software available for viewing multiple systems
- Displays all measured data, history, and battery analysis data
- Dry contact alarms available for summary alarm, watchdog alarm, low voltage, and open circuit alarms
- External protocols such as Modbus TCP, Modbus RS-232, and DNP3 are available
- Alarm inputs available for external device integration

Vigilant Cell Snapshot

Vigilant System

Each Vigilant has the following main components:

- 1 **Monitor** for up to 240 cells, divisible across 8 strings (e.g. 6 strings of 40 12V units)
- 1 **Sensor** per cell/unit, plus one additional sensor per string to monitor terminal resistance
- 1 **Wiring Harness** per sensor, connected to post clamps
- 2 **Post Clamps** per battery, to monitor voltage, internal resistance, connection resistance, float current, & negative post temperature

Monitor

Sensor

Clamp & Harness

Technical Specifications

Sensor Performance	
Voltage Measurement Range	0.05 – 18.5VDC
Voltage Resolution	± 1mV
Post Temperature Resolution	± 1°C
Cell Resistance Resolution	± 7µΩ
Strap Resistance Resolution	At 100µΩ strap r: ± 2µΩ
Float Current Resolution	At 100µΩ strap r: ± 1mA

Communication	
Onboard Storage	SSD
Memory Capacity	20 years of battery data average for 60C, expandable for larger systems
Local Data Download	Via USB port
External Protocols	Modbus TCP, DNP3 (in development)
Alarm Relays	(2) Input/Output standard (4) Additional w/add-on
Network Interface	RJ45 Ethernet

Electrical Data	
Monitor Electrical Supply (from DC supply)	36 – 72VDC 90 – 300VDC 280 – 580VDC
Other Power Options	24VDC mains input (for other voltages w/adapter)
Sensor Electrical Supply	From Monitor (via comms)
Sensor Supply Current	Operating: 6mA With ELM: 10mA
Isolation I/P to O/P	1,000VDC
Test current @ 2.5V	20A

General	
Dimensions (L x W x H)	Sensor: 50 x 50 x 25 mm (2 x 2 x 1 in.) Monitor: 242 x 200 x 65 mm (9.5 x 8 x 2.6 in)
Operating Temp. Range	-4 – 70 °C (25 – 158°F)
Certification	CE (pending)