



iQMS Battery Monitoring System

Model # IPQMS



Eagle Eye's **iQMS Battery Monitoring System** is designed to measure the aging status of up to 448 jars (or 448 cells) by measuring and recording: string voltage and current, as well as jar/cell voltage, internal resistance, connection resistance and temperature.

The iQMS is the premier battery monitoring system in Eagle Eye's IBwatch-Series. It ensures backup power systems are optimally maintained in large-scale environments. The iQMS is the main processing unit that measures up to 448 jars (or 448 cells) utilizing up to seven Relaying Units (RU). Each RU connects up to 64 jars (or 64 cells) and captures data from these batteries and sends it to the MPU in real-time. The iQMS can be used over a private network via TCP/IP, or communicated with RS232, RS422, RS485, with SMS/Email alerts, or through third-party software integration including Modbus and SNMP. Flexible expanding solutions allow multiple iQMS units to monitor all your systems in real-time.



Battery failure can happen overnight, and Eagle Eye's IBwatch-Series real-time battery monitoring allows full protection and confidence against such failures. Ohmic resistance and voltage measurements (per jar) are taken as often as every five minutes. String current, DC voltage, and temperature are measured in real-time. These measured parameters will provide the user a real-time understanding of their batteries state-of-health.

100% functionality is required for backup power systems to be effective. Every battery in a system contributes to the overall health of a system, and one bad battery can compromise an entire backup power system. Continuous battery monitoring will provide the results to ensure proper battery management and protection during an event outage.

Ohmic resistance results represent the condition and state-of-health of the battery, and expose weaknesses in cells & intercell conditions without stressing the battery. Cell and string voltage results can indicate if the battery is fully charged or if there are problems

with the battery or charger. Stable temperature results indicate a proper operating environment, while high recorded temperatures can be a sign of thermal runaway. Use the iQMS battery monitoring system to measure these parameters to protect the integrity of your system, and exceed industry testing requirements by IEEE (Institute of Electrical and Electronics Engineers) and NERC (North American Electric Reliability Corporation).

The iQMS Battery Monitoring System Includes:

- iQMS MPU Body
- Relaying Units (up to seven per MPU)
- Clamps: O-Type for cable connection or C-Type for bus-bar connection
- Sensing cable (current line)
- Signal cable (voltage line)
- Temperature cable
- Total voltage current cable
- Control power cable
- Centroid Battery Management Software
- User Manual

Before installation of the iQMS, Eagle Eye will send you an IBwatch-Series Site Survey Form. This site survey form allows us to customize your iQMS battery monitoring system based on your batteries, network, and battery site.

The iQMS battery monitoring system comes complete with Eagle Eye's Centroid Battery Management Software package which allows all battery systems to be monitored 24 hours a day, 365 days a year via a remote computer. Centroid provides real-time battery monitoring and string/cell trending with reporting capabilities. String trending reports provide system resistance, voltage, temperature, and voltage/ohms comparison. Cell trending reports provide battery/connection resistance, voltage, and temperature. Custom alarm settings can be configured per string.

Reduce maintenance costs, improve up-time and manage battery assets effectively by using the iQMS battery monitoring solution. Real-time battery monitoring protects the user from costly downtime, data loss, and security risks. Real-time battery monitoring also reduces maintenance and replacement costs by maximizing battery life.

Technical Specifications	Advantages	Applications
Technical Specifications		
Battery Types:	VLA (Vented Lead Acid/Wet Cell), VRLA (Valve Regulated Lead Acid), NiCad (Nickel Cadmium), & Others	
Measurement Range:	Battery Capacity: 5 – 6,000 Ah Jar/Cell Voltage: 1 – 16 VDC AC Voltage/ Current: 0 – 600 VAC/999.9 A DC Voltage/Current: ~ 999.9 VDC/~999.9 A	

Accuracy:	DC Voltage / Current: $\pm 0.5\%$ / $\pm 1\%$ Temperature: $\pm 2\%$ Internal Resistance: $\pm 2\%$ Cell Voltage: $\pm 1\%$
Resolution:	AC Voltage / Current: 0.1 V / 0.1 A DC Voltage / Current: 0.1 V / 0.1 A Cell Voltage: 10 mV Internal Resistance: 0.001 m Ω Temperature: 0.5 $^{\circ}\text{C}$
Test Speed:	3 - 4 seconds per cell
Test Load:	Less than 2 A per cell
Measuring Interval:	Adjustable from 5 min to 24 hours (voltage & resistance)
Data Transfer:	TCP/IP, RS-232 to USB, MODBUS, SMS
Bandwidth Use:	Less than 3 Kbps (Kilobit per second) peak
Connections:	Ethernet, RS-232, RS-485
Display:	Backlit LCD
Internal Storage:	Approximately 1 month backup
Operating Environment:	Temperature: 0 - 65 $^{\circ}\text{C}$ (32 - 150 $^{\circ}\text{F}$) Relative Humidity: Under 80%
Power Requirements:	100 - 250 VDC or 110 - 220 VAC
Dimensions:	MPU: 290 x 280 x 90 mm (11.41 x 11.02 x 3.54 in) Relaying Unit: 310 x 178 x 85 mm (12.2 x 5.78 x 3.34 in)
Weight:	MPU: 4.5 kg (10 lbs) Relaying Unit: 4.5 kg (10 lbs)

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