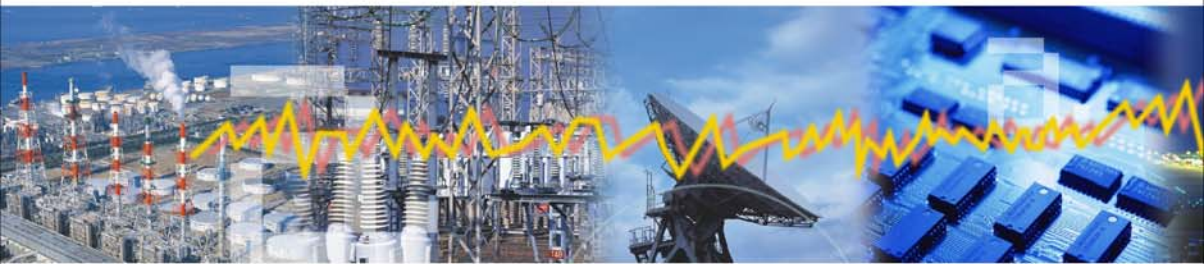


# **Enerbatt**

Battery Monitoring System

## **NO MORE ENGINEERS' NIGHTMARE FOR MAINTENANCE, TESTING & INSPECTION OF BATTERY**





Battery bank plays an important role in many back-up power equipments , such a **UPS , Telecom Power , Emergency Power , DC Lighting , and DC Auxiliary Power System**, which provide a stable & reliable AC or DC power source. And the condition of batteries will be the main concern to affect the system reliability. For many years, people have invested large amount of labor measurements in checking the health of batteries , but the critical jobs are usually untrustworthy, dangerous, redundant, and time consuming.

**Enerbatt BMS , Battery Monitoring System**, has a complete solution for capturing important parameters of batteries at real time. The voltage, current, and temperature are easy to be read out for each battery block. So it is no more work nightmare to maintenance engineers about the health checking of batteries. They will know the condition of batteries from desktop or notebook in a matter of much safer, much quicker, more efficient, more reliable, and lower cost.

By labor measurement



Employ **Enerbatt BMS**



Only **Enerbatt BMS** can substitute for large amount of labor works to make a real cost effective operation for battery maintenance , testing , and inspection.



## The design of *Enerbatt BMS* is such as to provide the most suitable features and characteristics:

### ◆ Flexible configuration & installation

- master-free technology.
- 8 voltage channels, 1 current sensor port, and 1 temperature probe port are built-in one **Scanning Unit**.
- monitoring battery up to 2,000 blocks.
- maximum configuration availability reaches to 6.
- accessible to different battery quantity for individual configuration.



### ◆ High speed scanning and noise eliminating

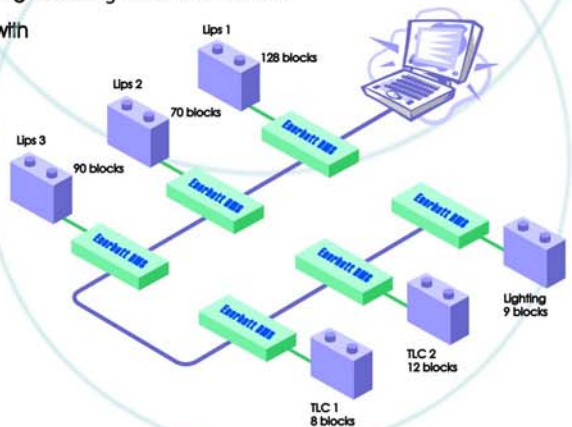
- employing electronic channels without mechanical devices.
- scanning speed up to 640 channels per second.
- ease of capturing real data / curve under high rate discharge, such as UPS application.
- disable unreasonable data acquisition by noise eliminating process.

### ◆ User-friendly application

- based on the conventional operating system of Microsoft Windows.
- design of Graphic User-friendly Interface (GUI) application.
- real time displays of block voltage, string voltage, branch current, main current, & temperature.
- create history databases.
- colorful bar / curve diagrams showing on computer screen.
- configurations & warning conditions by user-default.
- making customer mind reports in other conventional software, as Microsoft EXCEL.

### ◆ Communication & protocol

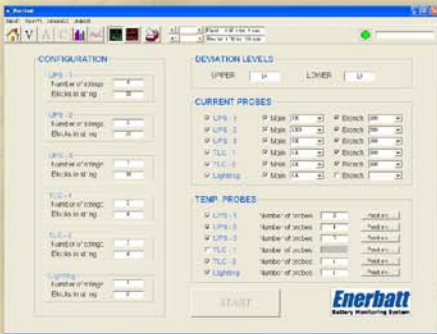
- serial link communication for connecting *Scanning Units* each other.
- link to computer via RS232 serial port with J-bus / MOD-bus protocol.
- selectable communication speed.
- optional RS422 for long distance communication, CAN-bus protocol.



# Enorbatt BMS creates the effective battery monitoring system

Enorbatt BMS has been specifically master-free designed for flexible configuration and installation. Each **Scanning Unit** can play master or slave unit, according to system configuration requirement. All of **Scanning Units** are connected in serial communication protocol, and someone user-default unit shall be connected to the computer installed **BatrView** software through its computer communication port.

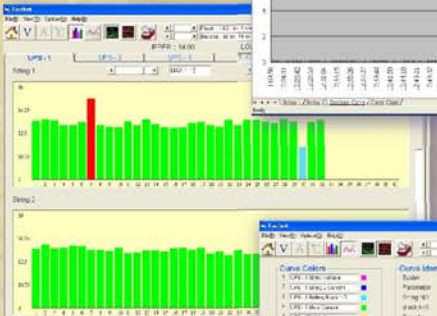
Employing **Enorbatt BMS** can create the effective battery monitoring system which watches battery up to 2,000 blocks through one serial communication link. Perhaps, these batteries in one back-up power source or multi-configuration whose maximum availability reaches six.



▲ BatrView allows users to create the most suitable configurations according to back-up system, string numbers, block numbers, current rating, and location of temperature probe.



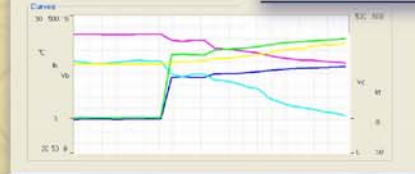
▲ In accordance with your configuration, BatrView displays the numerical parameters of battery blocks with colored background of real time.



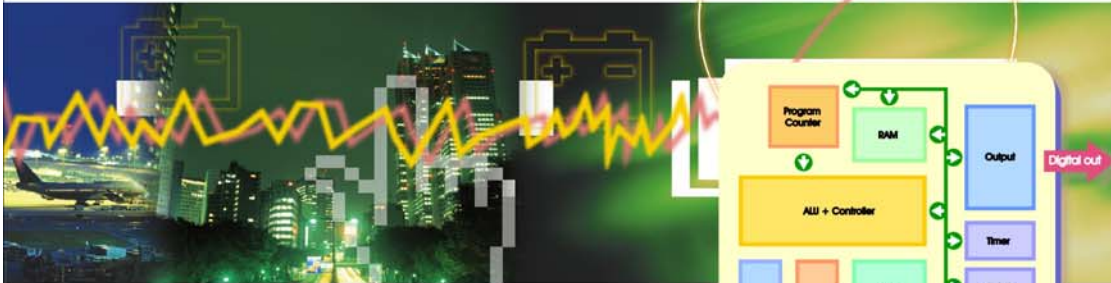
▲ Selecting Bass Diagram mode, BatrView can draw voltage-bars with colored mark.



▲ BatrView also provides another voltage-bar screen with plus or minus direction.



▶ The Graphing Curves mode of BatrView handles 8-line user defined history curves with different colors on a screen.



**The modular design *Enorbatt BMS* comprises :**

◆ **SCANNING UNIT**

which employs high speed scanning technology and the RISC microprocessor to capture parameters from individual battery blocks. The high performance RISC device has a lot of features intended to maximize system ability and minimize external peripheral components.

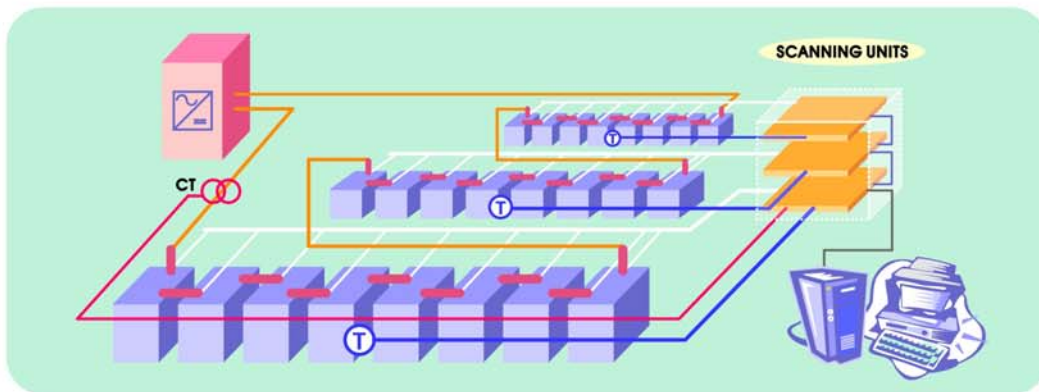
Each **Scanning Unit** can monitor battery voltage up to 8 blocks in a serial connection. It also built-in one current sensor port and one temperature probe port.

High speed scanning technology, 640 channels per second, is perfected especially for the application of extreme heavy current discharge during short time.

◆ **BATTERY MANAGEMENT SOFTWARE**

It, **BatReView**, is an exclusive and easy-to-learn tool that shows up the parameters of batteries connected **Scanning Units** at real time. This software provides Graphic User-friendly Interface (GUI) application which was developed based on Microsoft Windows operating system.

Engineers or maintenance personnel have easy time to process and analyze the parameters and history curves of batteries from computer screen. Its colorful graphic diagrams are very simple and clear to help kicking off sleepy or dead batteries.



## SCANNING UNIT TECHNICAL SPECIFICATION

GENERAL			
Operating Temperature	5°C ~ 40°C		
Relative Humidity	<95% without condensing		
Overall Dimension	255 (L) x 170 (W) x 27(H) mm		
Weight	350g		
POWER SUPPLY			
Supply Voltage	35 ~70 Vdc, 50~150Vdc		
Power Consumption	7 Watt, maximum		
Isolation Voltage	2500 Vrms, 1min		
Protection	Fuse		
VOLTAGE MEASUREMENT INTERFACE			
Block Rated Voltage	2V	6V	12V
Maximum Measurement Range	4V	8V	16V
Resolution	10mV		
Accuracy	±10mV	±30mV	±50mV
Input Impedance	≥1MΩ		
CURRENT MEASUREMENT INTERFACE			
Maximum Measurement Range	10,000A		
Resolution	1A		
Accuracy	± 3%		
TEMPERATURE MEASUREMENT INTERFACE			
Maximum Measurement Range	0°C ~ 100°C		
Resolution	0.1°C		
Accuracy	± 1°C		
COMMUNICATION INTERFACE:			
Unit Link	USART		
Computer Link	RS232 Serial Port		
Speed	9600bps / 19200bps		

Above specifications are subject to change without prior notice.

## Computer System Recommendation

EQUIPMENT	BASIC	RECOMMENDED
CPU	P-III 600 Mhz	P-III 900 Mhz
RAM	128 MB	256 MB
HD Space	1 GB	2 GB
Operating System	Windows 2000	Windows XP

## ACCESSORY KITS

- ◆ Standard Current Sensor from 50A to 2,000A
- ◆ Temperature Probe
- ◆ Auxiliary Connector for battery terminal
- ◆ RS232 / 422 Converter

