

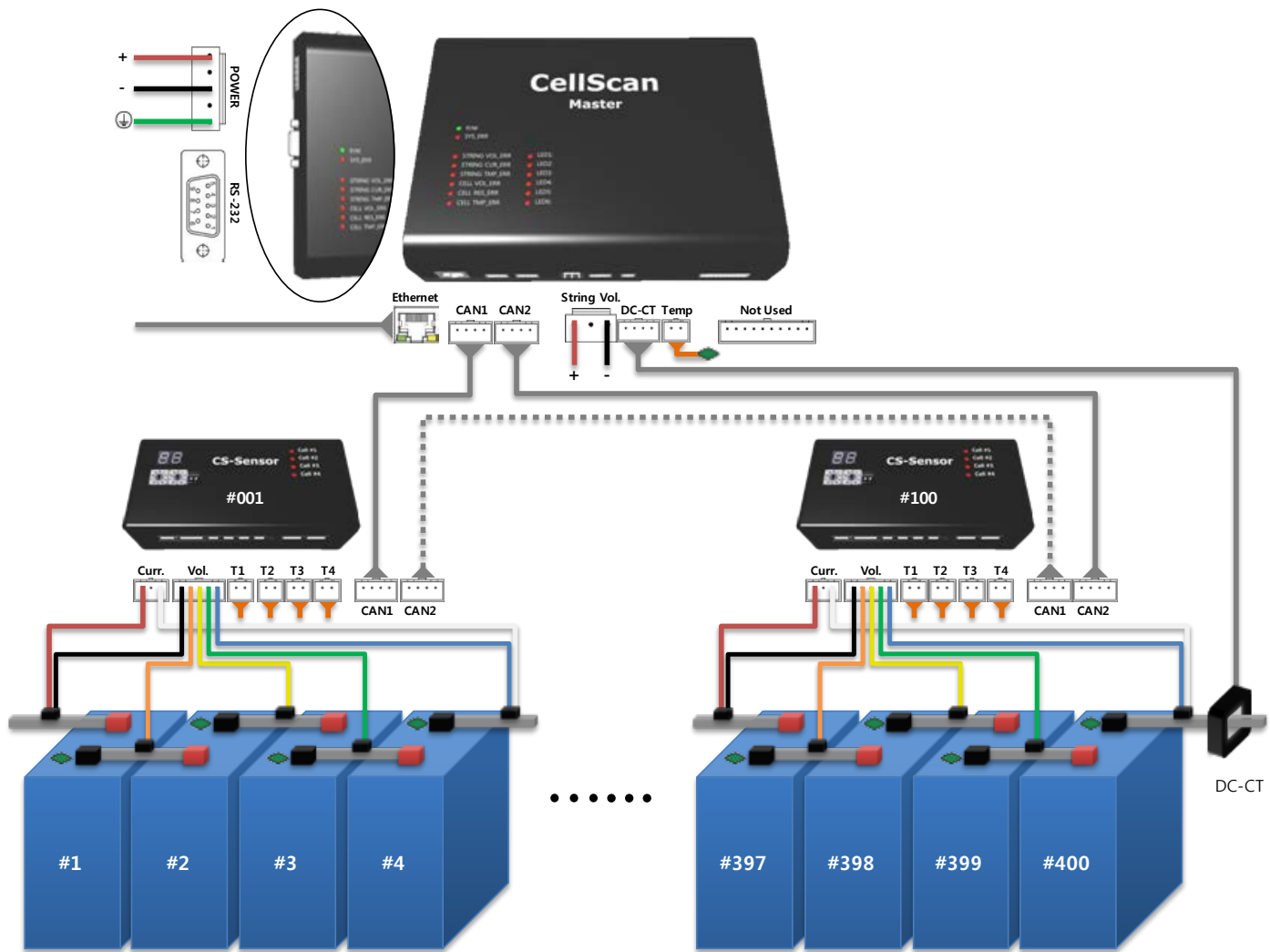


Really Real-time BMS like as Cheetah patented CellScan BMS (Battery Monitoring System) By using CAN (Controller Area Network)

Brief

- ▶ Compatible with the IEEE Std.1188-2005 maintenance recommendations on VRLA batteries,
- ▶ Measure each Voltage, Temperature and Internal Resistance on VRLA and Ni-Cd batteries,
- ▶ Use a single CAN (Controller Area Network) BUS between Master and 100 Sensors,
- ▶ Measure all voltage & temp. in a 1 sec, and all internal resistance on 400 cells in 30 sec.

Configuration



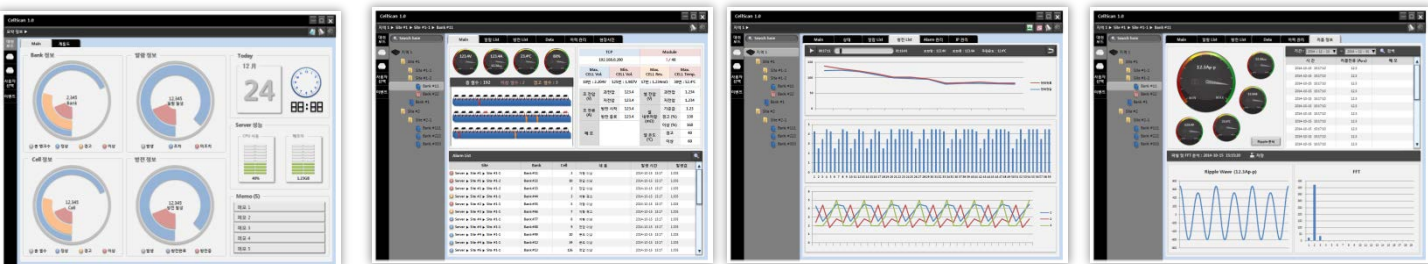
Features

- ▶ The measuring speed of CAN (Controller Area Network) is very fast, and
- ▶ During a discharge, a bad cell or inter-connection can be found by a measuring a voltage drop.
- ▶ UPS with CAN communication can communicate directly with Sensor (without Master)

Hardware

CellScan Master (Master)		CS-Sensor (Sensor)	
System Capacity		Measuring Capacity	
Max q'ty of sensor	100 Sensor per 1 Master	Type of sensor	LV sensor / HV sensor
String current and voltage	Each 1 pcs		4 cell measured by 2V/4V/6V/8V sensor / 4 cell measured by 12V sensor
Comm. port	CAN bus (2) for Ring, Ethernet (1), RS-232 (1)	Comm. port	2 line of CAN BUS, which is the high reliable.
Ambient temp.	1 pcs	Temp. sensor	4 pcs
Measuring Speed		Measuring Speed	
String voltage	0.1 sec	To measure each voltage and temperature on 400 cells	1 sec
		To measure an internal resistance on 400 cells	30 sec
Range & Accuracy		Range & Accuracy	
String voltage	~ 1,000VDC / ±0.5% of full scale	Cell voltage	~ 9.0V / ±0.1% of ±10mV (2V) ~ 17.0V / ±0.1% of ±20mV (12V)
String current	~ 1,000ADC / ±1.0% of full scale		
String ripple current	~ 1,000Ap-p / ±5.0% of full scale	Cell temperature	-20 ~ +80°C / ±1°C
Ambient temp.	- 20 ~ 80°C / ±1°C	Cell internal resistance	0.1mΩ (4,000Ah) ~ 100.0mΩ / ±2.0%
Resolution		Resolution	
String voltage	0.1V / 0.1A String current	Cell voltage	1mV
String ripple current	0.1Ap-p / 0.1°C Ambient temperature	Cell temperature	0.1 °C
		Cell internal resistance	0.001mΩ
Dimensions & Environment		Dimensions & Environment	
Dimensions	200 × 150 × 34mm (45mm)	Dimensions	128 × 61 × 35mm
Environment	Temperature: 0~50 °C / under Humidity: 80%RH	Environment	Temperature: 0~50 °C / under Humidity: 80%RH
Feature	<ul style="list-style-type: none"> •When the digit of CAN ID flash, CAN bus is abnormal. •When CAN ID and its communication are abnormal, it will be displayed. •The measuring period on cell voltage and temperature is (1 sec), and to measure an internal resistance on all cells is (30 sec) in maximum, which are changeable. 	Feature	<ul style="list-style-type: none"> •When the digit of CAN ID flash, CAN bus is abnormal. •When CAN ID and its communication are abnormal, it will be displayed. •The measuring period on cell voltage and temperature is (1 sec), and to measure an internal resistance on all cells is (30 sec) in maximum, which are changeable.

Software



- ▶ To monitor the measured data by CellScan analysis program in a real time.
- ▶ To show all statistical data on all strings of batteries measured by CellScan.
- ▶ To show all alarm list in a real time and to record all history to operate.
- ▶ To show each Voltage, Temperature and Internal-Resistance measured.
- ▶ To show a charging and discharging current and ripple current (waveform & FFT analysis).
- ▶ To show save a all measure data on a discharging and history information.
- ▶ To show the function of a discharging re-play.
- ▶ To supply e-mail and SMS service (option)



[CS-Master]

1 pcs of Master can link max.
100 * 2V or 12V sensors,
which is 2V * 400 cells or 12V
* 400 modules.

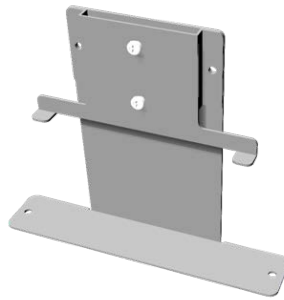
201 × 151 × 37mm



[CS-Sensor]

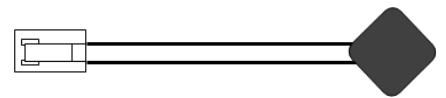
1 pcs of Sensor can measure
max. 4 * 2V or 12V batteries.

128 × 61 × 35mm

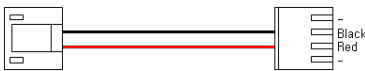


[Accessories]

•Sensor-guide



•Clamp to install a battery cables •Current transformer •Temperature sensor



•CAN Cable (Length: 1M)



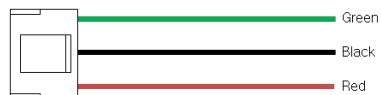
•Voltage Cable (Length: 2M))



•Voltage Cable (Length : 2M)



•String Voltage Cable
(Length : 2M)



•String Current Cable
(Length : 2M)



•String Current Cable
(Length : 2M)

240cells of 1 UPS batteries installed

