

# SIXTH SENSE: REMOTE VLA BATTERY MANAGEMENT



## **CELLGUARD SYSTEM-ELS+**

### **ELECTROLYTE LEVEL & TEMPERATURE MONITORING SYSTEM**

The **CELLGUARD SYSTEM-ELS+** Electrolyte Level & Temperature Monitoring System provides reliable electrolyte level and temperature monitoring on Vented Lead Acid (VLA) batteries in Utility, Telecommunications, Data Centers, and Industrial Battery Plant applications.

- Completely non-invasive to battery
- Complies with NERC PRC-005 electrolyte level inspection requirements with 24/7 alarm reporting
- Enhances operational safety with battery case temperature alarming in the event of abnormal battery thermal conditions
- Modular quick connect cabling provides time saving installation without the need for a site survey
- Alarms on low electrolyte levels, excessive battery case temperature, and power loss to the sensor
- Can be integrated to a commercially available data collection system
- Compatible with VLA Batteries of any voltage, size, or design

**MIDTRONICS**



Stationary Power

# CELLGUARD SYSTEM-ELS+



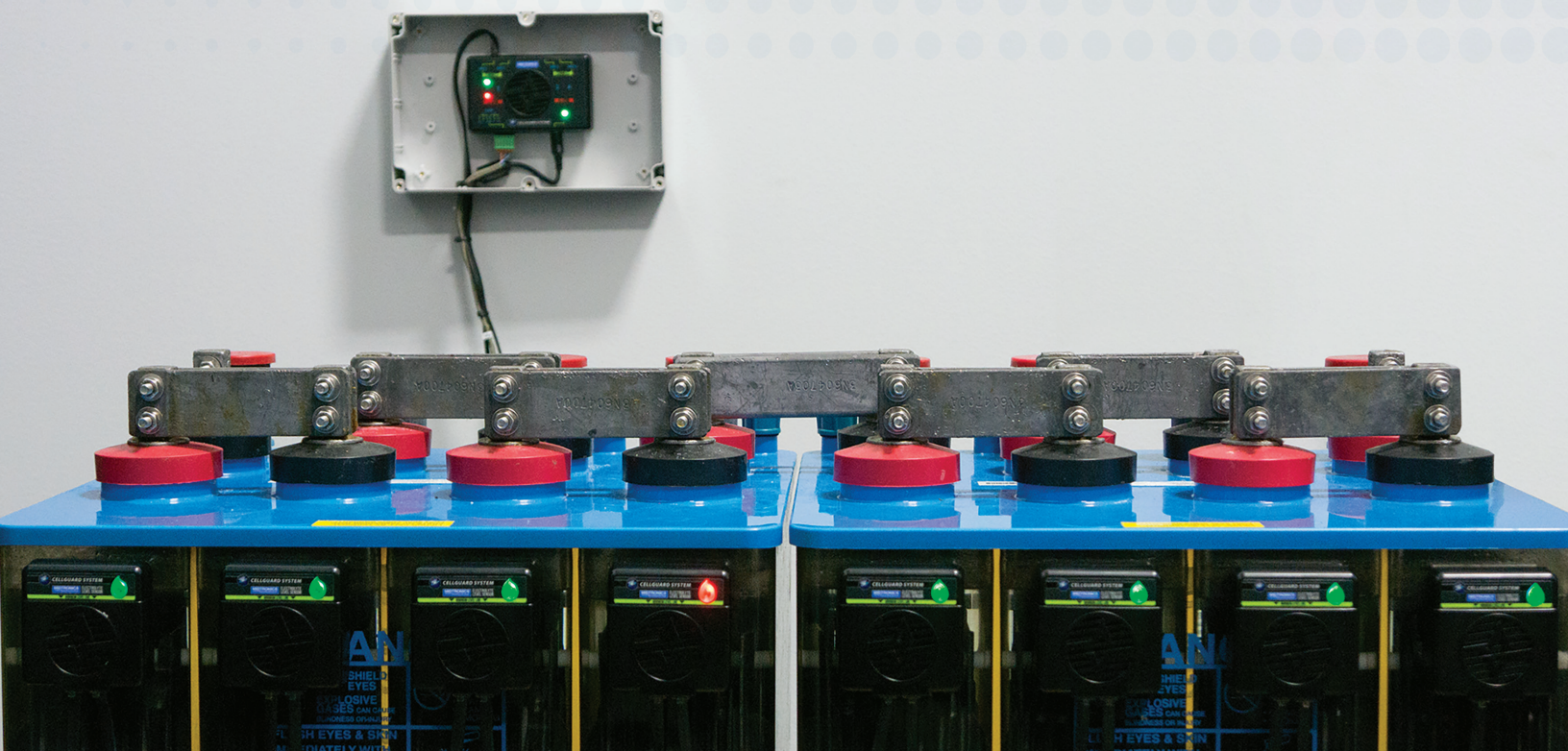
**CELLGUARD SYSTEM-ELS+**  
Electrolyte Level & Temperature Sensor  
(CG-ELS+ SENSOR)

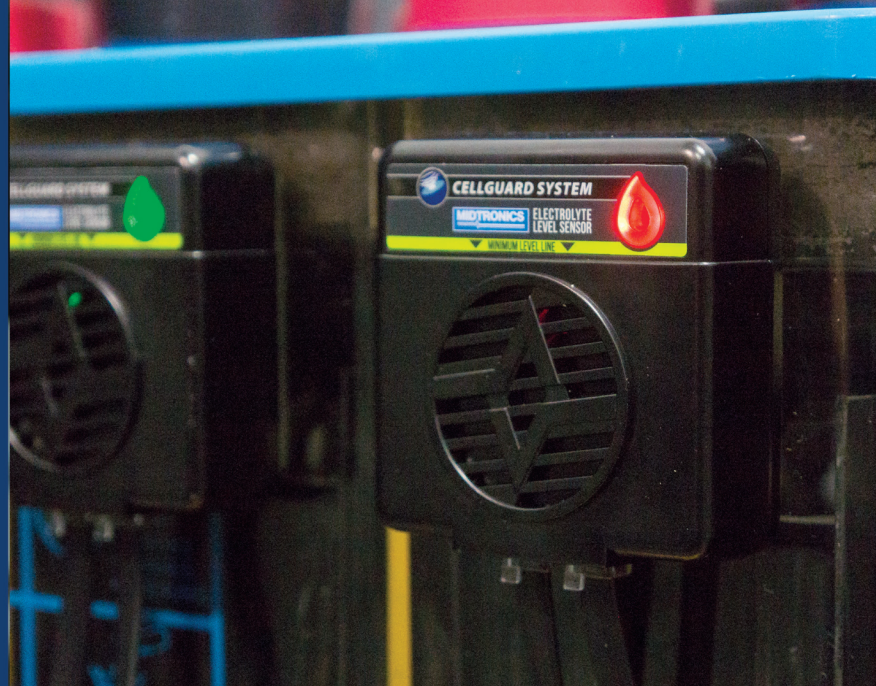


**CELLGUARD SYSTEM-ELS+**  
Hub  
(CG-ELS+ HUB)

## CONFIGURATION:

- The Sensors are connected in series to adjacent Sensors with modular cables to create a Sensor string
- The Sensor string terminates into one common powering and alarming module, the Hub
- The Hub provides power to a maximum of four Sensor strings
- The Hub aggregates all individual Sensor alarms from all Sensor strings to one common two form C dry contact interface
- Additional strings can be monitored by introducing another Hub and combing their dry contact outputs
- Optimized cable routing is configured from Hub-to-Sensor and Sensor-to-Sensor without additional cabling





## ALARM INDICATION:

- Both the Sensor and Hub units provide LED indication to visually identify VLA batteries that require servicing
- During a low level electrolyte level condition or if the battery case temperature limits are exceeded, the Sensor communicates an alarm condition to the Hub unit. The Hub senses the alarm state and provides a dry contact alarm\ lead status
- The Hub dry contact output is in alarm state during a power loss condition or during a sensor alarm condition
- Dry contact alarm leads support normally open and normally closed alarm indication to the alarm detection inputs of a commercially available Remote Terminal Unit (RTU)



## PRECISE AND SIMPLE INSTALLATION:

- The Sensor Alignment Tool, with built in bubble level, ensures correct Sensor placement for accurate electrolyte level sensing
- The Sensor is easily adhered to the battery case using double sided tape specifically designed to be compatible with VLA battery cases, even in harsh operating environments
- Cabling is designed for organized and tidy sensor interconnection and cable routing
- The Hub and Sensor components are quickly connected to a Sensor string with modular connect cables
- The Sensor is calibrated to the battery case characteristics and electrolyte level state
- Calibration is as easy as pressing a button and only takes seconds to complete

## CG-ELS+SENSOR SPECIFICATIONS

**Part Number:**

CG-ELS+ SENSOR

**Battery Types:**

Vented Lead-Acid (VLA) battery types

**Alarm Leads:**

Active Open, via RJ25 jack connection

**Alarm Activation (Temperature):**

Activation when battery case temperature is greater than 35° C ± 2°C or less than 0°C ± 2°C

**Alarm Activation (Electrolyte Level):**

Activation when level is below ± 2 mm of calibrated reference

**LED Status Indicator:**

Flashing Green (normal state), Flashing Red (alarm state),  
Amber (non-calibrated)

**Power Input:**

12V dc ± 2V dc at 2.5 mA Typical, via RJ25 jack Hub connection

**Operating Temperature Range:**

-10 to 65° C

**Storage Temperature Range:**

-20 to 70° C

**Dimensions:**

2.60" W X 2.60" D x 1.00" H  
(66.04 mm W x 66.04 mm D x 25.4 mm H)

**Enclosure:**

94V-0 ABS Plastic Housing

**Mounting:**

3M Adhesive Tape

**Maximum Case Thickness for Level Sensor:**

1/2" (non-opaque)

## CG-ELS+ HUB SPECIFICATIONS

**Part Number:**

CG-ELS+ HUB

**Battery Strings:**

Up to 4 Sensor strings containing 2, 4, 6, and 8 Volt batteries

**Input Configurations:**

Flexible configuration, typically 24, 48, 110/120, 220/240  
and 480 Volt systems

**ELS+ Sensor Arrangement:**

600 Sensors per Hub with 150 maximum Sensors for each of the 4 Hub  
inputs

Multiple Hub inputs can be used on a single battery string to monitor all the  
cells within the battery string

**Alarm output:**

2 Form C Dry Contacts, 1A

Duplicate connector pins for alarm aggregation from multiple Hub units

**LED Status Indicator:**

Green (normal state), Red (alarm state)

**Power Input:**

120V/240V AC 50/60 Hz AC Wall Adapter to 12 Vdc at 2 Amps max.

**Power Status LED:**

Green when module power is on

**Operating Temperature Range:**

-10 to 65° C

**Storage Temperature Range:**

-20 to 70° C

**Dimensions:**

3.972" W x 2.023" D x 0.876" H  
(100.9 mm W x 51.40 mm D x 22.25 mm H)

**Enclosure:**

94V-0 ABS Plastic Housing

**Mounting:**

Cable Tie Brackets or Free Standing

**MIDTRONICS**



Stationary Power

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