



## WIRED BATTERY MONITORING SYSTEM

The CELLGUARD™ wired battery monitoring system delivers economical, yet highly accurate and reliable remote health analysis of stationary batteries in applications with high electromagnetic noise. Utility personnel are provided with continuous 24/7 monitoring of key battery performance indicators to help enable proactive maintenance, ensure battery performance, and deliver uninterrupted uptime when it matters the most.



**ENSURE**  
UPTIME



**24/7**  
MONITORING



**WIRED**  
COMMUNICATION

## HIGHLIGHTS & TECHNOLOGY

All key battery health indicators are tracked, displayed and communicated to provide visibility to any potential change in the performance characteristics and expectations of each battery within the critical power system.

One battery sensor module per battery is capable of monitoring internal resistance, voltage, and temperature, delivering a comprehensive battery state of health analysis.

One string sensor module per string, in conjunction with a string current transducer provides monitoring of the string voltage, current, and ambient temperature.

Battery sensor modules are hard-wired for uninterrupted communication, perfect for applications where high electromagnetic noise is present.

Provides internal resistance testing and performance trending.

Battery level temperature monitoring will alert the user to thermal runaway.

The control module records critical performance elements including alarms and discharge events.

The battery sensor module draws just 3mA from the battery resulting in a negligible impact on the battery's overall capacity.

Alarm parameters and thresholds are managed through the control module which also delivers real-time system data through the web-based CELLTRAQ data management software.

## APPLICATIONS



DATA CENTERS



CRITICAL POWER



POWER UTILITIES



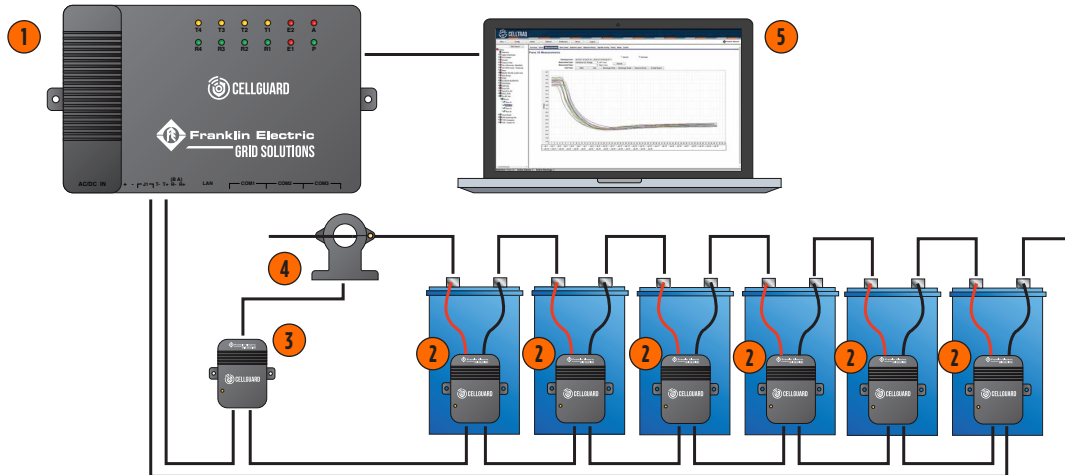
TELECOMM



TRANSPORTATION



## SYSTEM COMPONENTS



- 1 Control module
- 2 Battery sensor module
- 3 String sensor module
- 4 Current transducer
- 5 CELLTRAQ data management software

## SPECIFICATIONS

### Environmental

- Operating temperature: -5°C to 50°C
- Humidity: 5% to 95%

### Monitoring Capability

- Maximum batteries on a single String: 300
- Control module string maximum: 6
- Control module battery maximum: 360

### Battery Types

- 1.2V, 2V, 6V, 12V (capacity less than 3000AH)

### Insulation

- 2000 VAC

### Weight

- Control module: 0.3 Kg
- Battery sensor module: 75 g
- String sensor module: 80 g

### Controller Module Communication Interfaces

- RS485
- Ethernet Port (10/100M)
- Meets MODBUS/RTU, MODBUS/TCP, and SNMP protocol

### Measurement & Accuracy

Component	Range	Accuracy
String voltage	20 to 800V	+/- 0.5%
Battery voltage	1.2V, 2V, 6V, 12V	+/- 0.1%
Battery resistance	50 to 65535uΩ	+/- 2%, 1uΩ
Battery temperature	-5°C to 99.9°C	+/- 1°C
String current	0 to 1000A	+/- 2%
Ambient temperature	-5°C to 99.9°C	+/- 1°C

### Power Requirements

- Control module: 85 to 264VAC, DC48V or 110V to 370VDC, 10W
- Battery sensor module: < 13mA (1.2V, 2V) or 7mA (6V, 12V) from battery
- String sensor module: 8 to 13VDC, 1 W, power from control module

### Approvals & Certifications

- EMC: EN61326-1:2013 EN61326-2-1:2013
- Safety: EN61010-1:2010, UL61010-1:2013
- CE

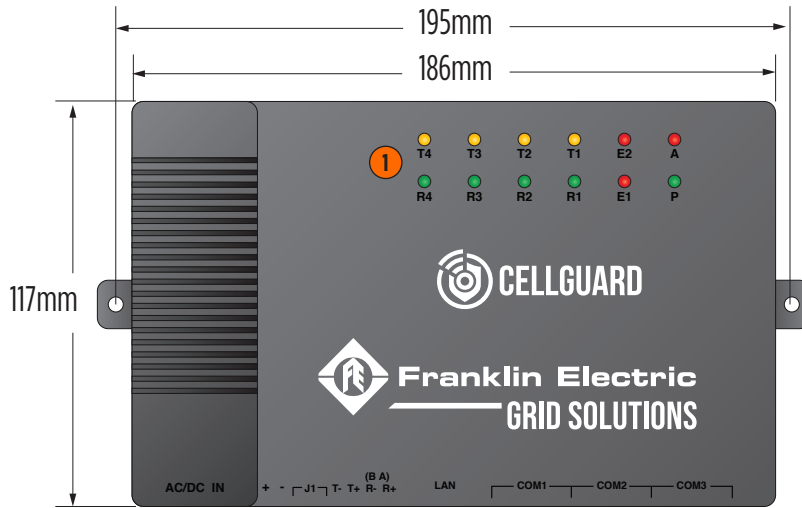
### Reliability

- Auto reboot trigger: built-in WDT
- MTBF: 100,000 hours



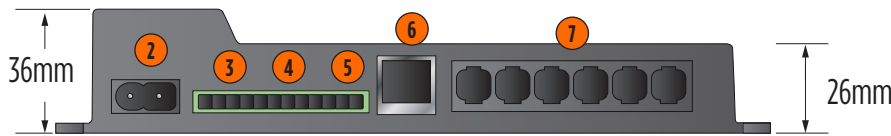
## DIMENSIONS

### CONTROL MODULE

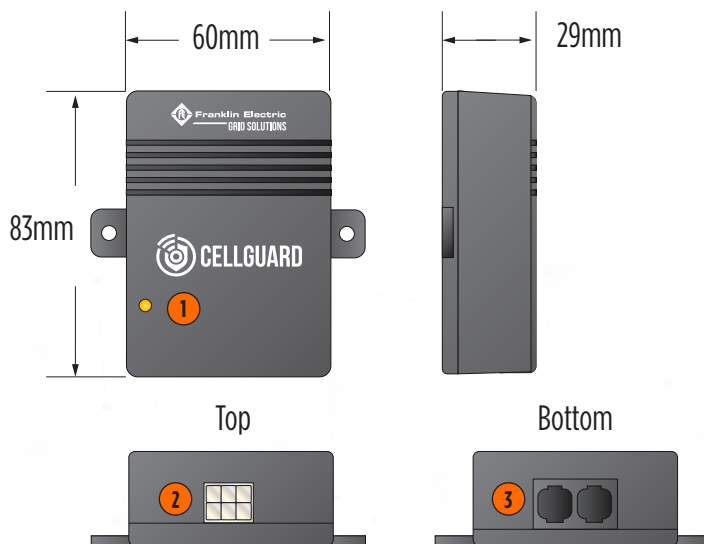


#### Control Module Components

- ① Alarm indicator lights
- ② Power input
- ③ Power output
- ④ Dry contact
- ⑤ Upload port
- ⑥ LAN port
- ⑦ Communication ports



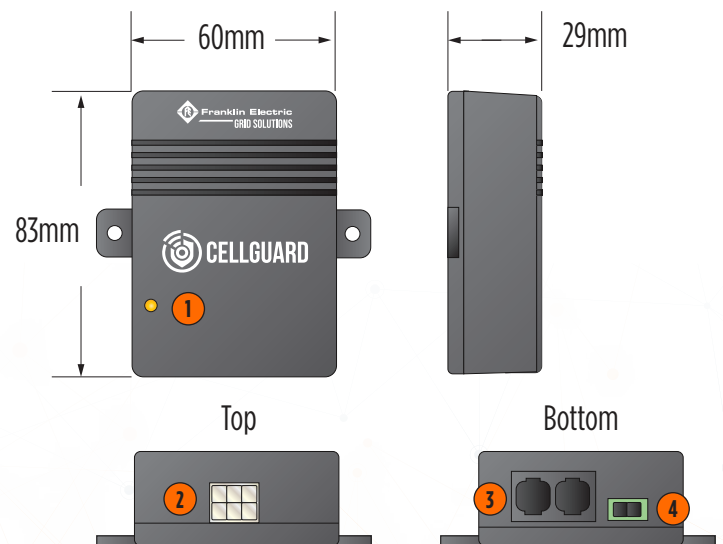
### BATTERY SENSOR MODULE



#### Battery Sensor Components

- ① Indicator light
- ② Battery connection port
- ③ Communication port

### STRING SENSOR MODULE



#### String Sensor Components

- ① Indicator light
- ② Battery sensor connection port
- ③ Communication port
- ④ Power input



## ORDERING INFORMATION

### CONTROL MODULE



Model	Description
CGBC-300-WD	CELLGUARD™ wired battery monitoring control module, 120 volts AC, manages 6 strings maximum, 300 cells on one string maximum, 360 cells on a module maximum
CGBC-300-WD-48V	CELLGUARD™ wired battery monitoring control module, 48 volts DC, manages 6 strings maximum, 300 cells on one string maximum, 360 cells on a module maximum

Note: A system (consisting of one control module, multiple battery sensors, and one or more string sensor modules) is capable of monitoring one serial string or multiple parallel strings.

### BATTERY SENSOR MODULES



Model	Description
CGS3-01V-WD	CELLGUARD™ wired battery monitoring battery sensor module for Ni-Cad
CGS3-02V-WD	CELLGUARD™ wired battery monitoring battery sensor module for 2V batteries
CGS3-06V-WD	CELLGUARD™ wired battery monitoring battery sensor module for 6V batteries
CGS3-12V-WD	CELLGUARD™ wired battery monitoring battery sensor module for 12V batteries

Note: Each sensor module includes all associated installation cables, connectors, and tabs.

### STRING SENSOR MODULES



Model	Description
CGVTC3-600-WD	CELLGUARD™ wired battery monitoring string sensor module with ambient temperature sensor, 1000A maximum, includes current transducer

Note: Each sensor module includes all associated installation cables, connectors, and tabs.

### SENSOR MODULE ADDRESS MODIFIER



Model	Description
CGS3-AMM-WD	Sensor module address modifier