WIRED BATTERY MONITORING SYSTEM

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

ENSURE UPTIME

24/7 MONITORING

BATTERY HEALTH

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

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

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

Compatible with Electrolyte Level Monitoring System that monitors electrolyte level on Vented Lead Acid (VLA) systems.

The base coordinator unit (BCU) records critical performance elements including alarms and discharge events.

The battery sensor draws as low as 13mA from the battery resulting in a negligible impact on the battery's overall capacity.

Alarm parameters and thresholds are managed through the base coordinator unit which also delivers real-time system data through the web-based UNITE™ data management software.

The system's commissioning time is minimized through the CONVERGE™ Web Interface setup tool which guides users through the install process. Standard configuration settings can be download and re-uploaded at different installations to further improve commissioning efficiency.

APPLICATIONS

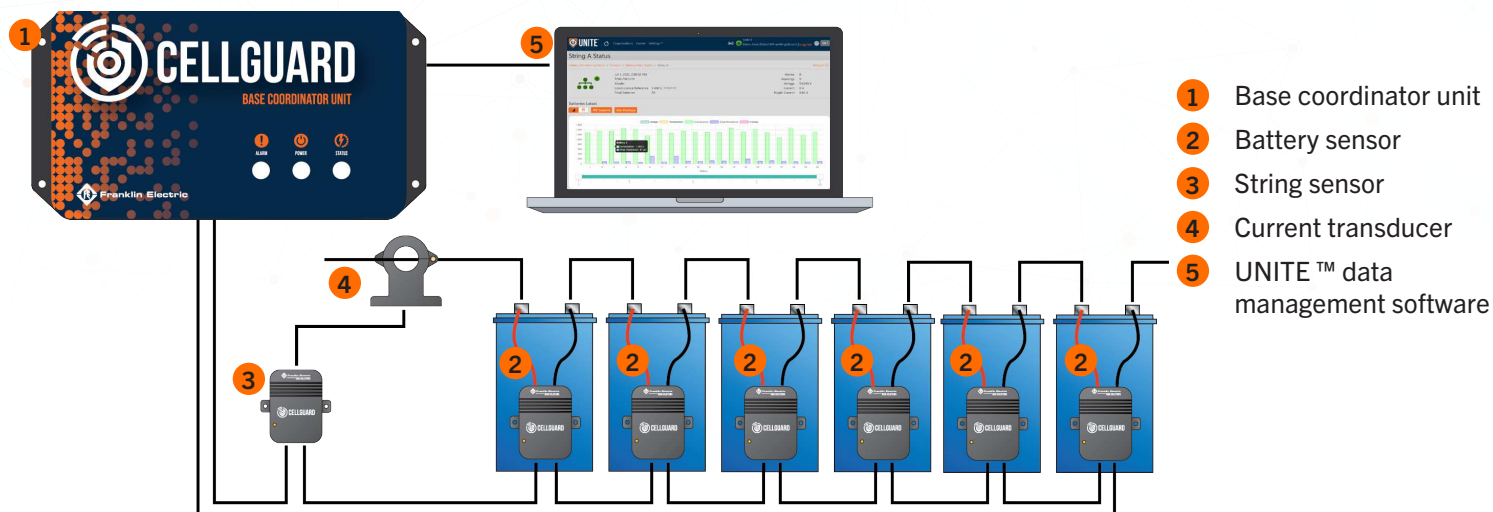**CRITICAL POWER**

DATA CENTERS

TRANSMISSION/ DISTRIBUTION

RAIL

TELECOMMUNICATIONS

SPECIFICATIONS

SYSTEM COMPONENTS

1. Base coordinator unit
2. Battery sensor
3. String sensor
4. Current transducer
5. UNITE ™ data management software

ENVIRONMENTAL MEASUREMENTS

Operating Temperature	-10° C to 50° C
Humidity	5% to 95%

MONITORING CAPABILITY

Maximum Batteries on a Single String	180
Base Coordinator Unit String Maximum	6
Base Coordinator Unit Battery Maximum	360

SPECIFICATIONS

Battery Types	2V, 6V, 12V (capacity less than 3000AH)
Insulation	2000 VAC
Weight (Coordinator)	0.3 Kg
Weight (Battery Sensor)	75 g
Weight (String Sensor)	80 g

CONTROLLER COMMUNICATION INTERFACES

Serial Comm. Port	RS485 Modbus/RTU
RJ45 Ethernet Comm. Port	SNMP, Modbus/TCP
RJ22 Module Comm. Port	3 sensor COM ports

SPECIFICATIONS

POWER REQUIREMENTS

Base coordinator unit	14-36 VDC 40W, external power supplies available
Battery sensor	< 13mA (2V) or 7mA (6V, 12V) from battery
String sensor	10.8 to 13.8VDC, 2W, power from control module

RELIABILITY

Auto reboot trigger	Build-in WDT
MTBF	100,000 hours

APPROVALS & CERTIFICATIONS

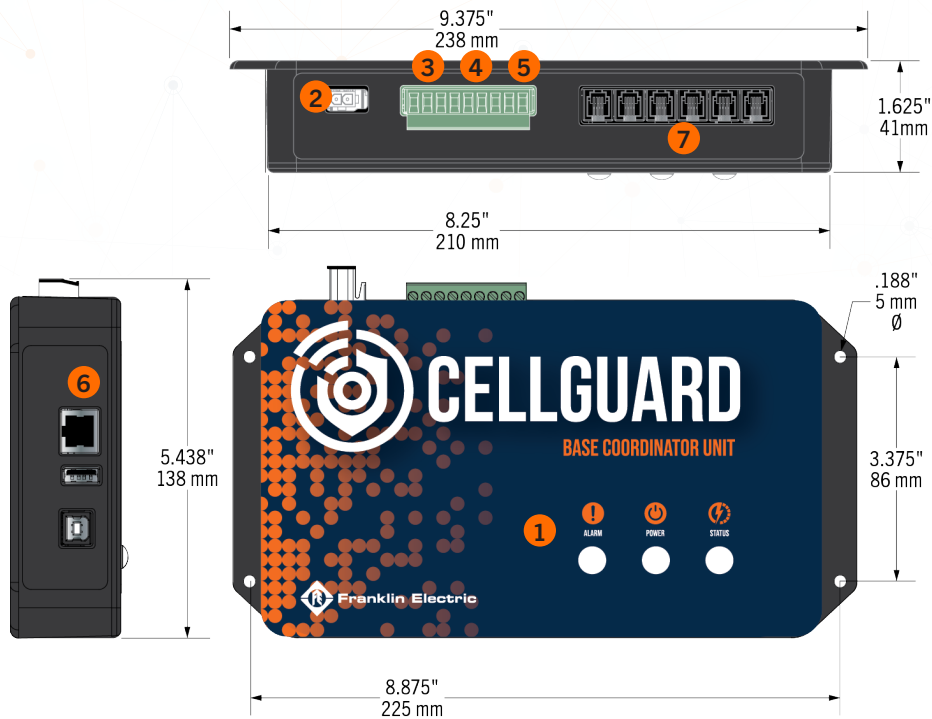|	
EMC Certification	CISPR 11, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-11
Compliance	CE & FCC

MEASUREMENT & ACCURACY

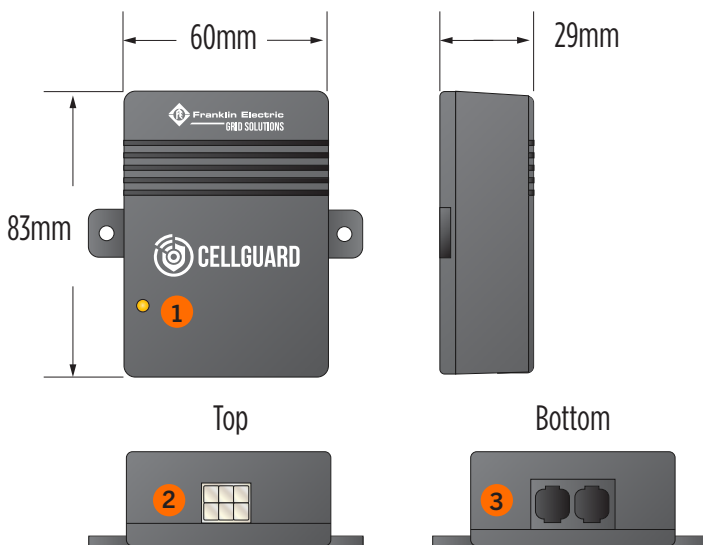| Component	Range	Accuracy
String voltage	20 to 800V	+/- 0.5%
Battery voltage	2V, 6V, 12V	+/- 0.1%
Battery resistance	50 to 65535uΩ	+/- 2%, 1uΩ
Battery temperature	-5° C to 99.9° C	+/- 1° C
String current	0 to 1000A	+/- 2%
Ambient temperature	-5° C to 99.9° C	+/- 1° C

DIMENSIONS

BASE COORDINATOR UNIT

9.375"
238 mm

1.625"
41mm

8.25"
210 mm

.188"
5 mm
Ø

3.375"
86 mm

5.438"
138 mm

8.875"
225 mm

ALARM   POWER   STATUS

CELLGUARD
BASE COORDINATOR UNIT

Franklin Electric

Components

1	Indicator lights
2	Power input
3	String sensor power
4	Dry contact relays
5	AUX inputs
6	USB-B, USB-A and Ethernet
7	Communication ports

BATTERY SENSOR

60mm

29mm

83mm

Franklin Electric
GRID SOLUTIONS

CELLGUARD

Top

Bottom

Battery Sensor Components

1	Indicator light	**3**	Communication ports
2	Battery connection port		

STRING SENSOR

60mm

29mm

83mm

Franklin Electric
GRID SOLUTIONS

CELLGUARD

Top

Bottom
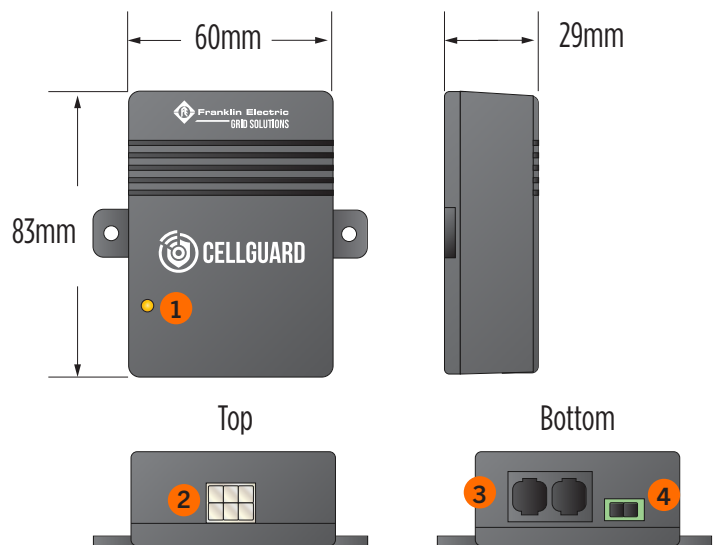
String Sensor Components

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

ORDERING INFORMATION

BASE COORDINATOR UNIT

Model	Description
CGBC-350-HWD	CELLGUARD™ wired battery monitoring base coordinator unit, utilizes CONVERGE™ interface manages 6 strings maximum, 300 cells on one string maximum, 360 cells on a module maximum

POWER SUPPLY

Model	Description
CGBC-DC-72-WD	Power supply for 18-72 VDC. Includes input and output wiring.
CGBC-DC-370-WD	Power Supply for 120-370 VDC. Includes input and output wiring.
CGBC-DC-1500-WD	Power supply for 200-1500 VDC. Includes input and output wiring.
CGBC-AC-1224-WD	Power Supply for 85-264 VAC. Includes Type — A wall outlet (NEMA1-15) for North America.

BATTERY SENSOR

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

STRING SENSOR KIT

Model	Description
CGTC3-600-WD	CELLGUARD™ wired battery monitoring string sensor module with ambient temperature sensor, 600V maximum, includes current transducer

Included in the Kit

- Temperature/Current (TC) Sensor
- Current Transducer
- Interconnect Return Cable, 8 meter, with RJ22 plugs
- Spare RJ22 plugs (qty 18)
- Interconnect Cable, 30 cm, with RJ22 plugs
- Current Transducer Cable with Temperature Sensor

SENSOR ADDRESSING MODULE

Model	Description
CGS3-AMM-WD	Sensor module address modifier

ORDERING INFORMATION

BATTERY HARNESSES

Model	Description
CGS3-25BH-WD	CELLGUARD™ wired battery harness, 25 cm
CGS3-50BH-WD	CELLGUARD™ wired battery harness, 50 cm
CGS3-80BH-WD	CELLGUARD™ wired battery harness, 80 cm

BATTERY INTERCONNECT CABLES

Model	Description
CGS3-30CBL-WD	CELLGUARD™ wired battery harness, 25 cm
CGS3-70CBL-WD	CELLGUARD™ wired battery harness, 50 cm
CGS3-100CBL-WD	CELLGUARD™ wired battery harness, 80 cm
CGS3-800CBL-WD	CELLGUARD™ wired battery interconnect cable, 8 m, with RJ22 plugs
CGS3-RJ22-WD	CELLGUARD™ spare RJ22 plugs (qty 100)

BATTERY TABS

8 Packs

8 packs of battery tabs are included with CELLGUARD™ Wired Battery Monitoring systems at no cost, however, quantities must be specified upon ordering.

Model	Description
429-0000015	CELLGUARD™ wired battery tab, 8 mm, U-type (qty 8)
429-0000016	CELLGUARD™ wired battery tab, 6.5 mm, Ring (qty 8)
429-0000017	CELLGUARD™ wired battery tab, 8 mm, Ring (qty 8)
429-0000018	CELLGUARD™ wired battery tab, 10 mm, U-type (qty 8)

50 Packs

Model	Description
CGS3-BT6-WD	CELLGUARD™ wired battery tab, 6.5 mm, Ring (qty 50)
CGS3-BT8-WD	CELLGUARD™ wired battery tab, 8 mm, Ring (qty 50)
CGS3-BT10-WD	CELLGUARD™ wired battery tab, 10 mm, U-type (qty 50)