



# HINDLEPOWER

## BRUNO DC SYSTEM WATCHDOG



# BRUNO

DC SYSTEM WATCHDOG

- Empowers reliability of your DC system by detecting the undetected
- Enhances the intelligence of your DC system
- Encompasses your entire DC system: Battery, Charger, System Loads and other DC equipment



HINDLE HEALTH<sup>+</sup> SYSTEM

PRODUCT



# WHAT CAN **BRUNO** DO FOR YOU?

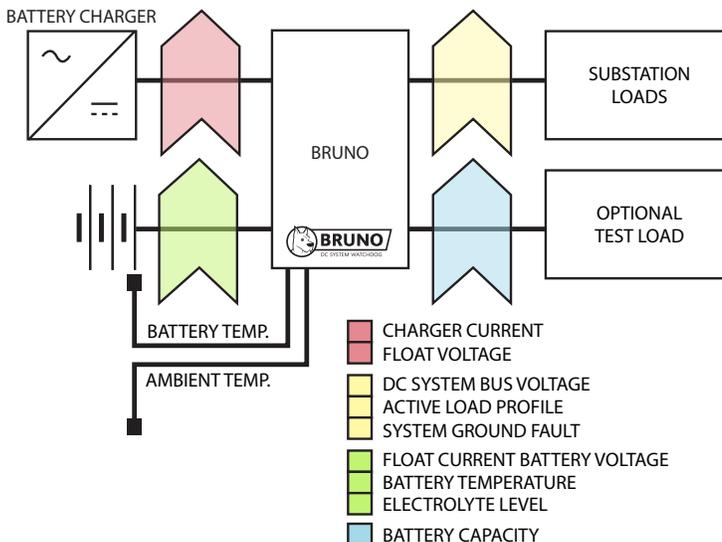


BRUNO empowers DC system reliability by detecting the undetected. With built in intelligence, you will have clear insight into your entire DC system and have the peace of mind knowing it is operating properly. The user-friendly interface paired with the Hindle Health System will allow you to simplify data gathered from your battery, charger, system loads and other DC equipment all while streamlining maintenance procedures to make the job easy. BRUNO's versatile, adaptive technology makes it your true partner in DC system reliability.

Float Current Measurement	Float current is monitored, recorded and trended over the life of the battery
Temperature	Battery and ambient temperature are monitored, recorded, and trended over the life of the battery
Battery Supply Voltage	The float charge voltage, supplied to the battery, is monitored, recorded and trended over the life of the battery
Electrolyte Level	The electrolyte level is recorded manually for centralized data collection
Battery Capacity Test	Battery Capacity testing per IEEE 450/1106/1188
Active Load Profile	Active Load Profile: Battery current, battery voltage, and charger current is recorded for any event that discharges more than 1A from the battery
Intelligent Ground Fault	DC system ground fault detection for all components in circuit
Battery Continuity	Verifies continuity of the battery, also known as open battery

## COMMUNICATIONS & DATA

Communication Protocol	Modbus RTU over Serial/Ethernet
Data Format	.csv available for download via flash drive
	.pdf available for download via flash drive



## STANDARD FEATURE HIGHLIGHTS

- Innovative design with a full color, 10.1" LED capacitive touch-screen interface
- Data is presented three (3) ways:
  - Viewable on the LED display
  - Downloaded in standard reports format (PDF)
  - Downloaded for analysis in Excel format (CSV)
- Patented fail safe design ensures the battery is always connected to your loads during testing modes or in the event of any component failure
- 3rd Party equipment alarming for centralized data integration
- Built-in NERC PRC-005 scheduler that can be tailored to your own maintenance requirements

# NERC PRC-005 COMPLIANCE

## WITH THE BRUNO DC SYSTEM WATCHDOG

EASTERN ELECTRIC  
1075 SAINT JOHN STREET  
9678 SUB



NERC PRC-005 Maintenance						
Maintenance Activity	NERC Max	Scheduled	Method *	Last Test	Next Test	Last Status
Verify Supply Voltage	4 Months	N/A	Continuous	10:51pm	11:51pm	Pass
Unintentional Grounds	4 Months	N/A	Continuous	10:51pm	11:51pm	Pass
Float Voltage	18 Months	N/A	Continuous	10:51pm	11:51pm	Pass
Electrolyte Level	4 Months	4 Months	Manual	01/22/16	04/24/16	Pass
Battery Continuity	18 Months	18 Months	Automated	06/10/15	12/14/16	Pass
Connection Resistance	18 Months	18 Months	Manual	06/10/15	12/14/16	Pass
Float Current	6 Months	1 Day	Automated	03/21/16	03/22/16	50mA
Capacity Test	3 Years	3 Years	Manual	03/17/16	03/17/19	105.3%
Battery Rack Condition	18 Months	18 Months	Manual	06/10/16	12/15/16	Pass
Visual Inspection	6 Months	18 Months	Manual	03/21/16	03/22/16	Pass



**EASY TO  
DOWNLOAD  
REPORTS**

**SYSTEM  
BENEFITS**

- Meets the requirements for NERC PRC-005 DC system compliance, monitoring and reporting for DC systems
- Early warning for battery failure by monitoring key performance parameters
- Provides detailed outage performance information
- Helps the operator isolate a ground fault within the DC system
- Simple and easy to use, just like your smart phone
- Remote communication for alarm indications

# BRUNO DC SYSTEM WATCHDOG

## SPECIFICATION GUIDE

To size a BRUNO for your system you will need the following parameters...

- Nominal DC Voltage of system
- Constant Current rating of the system @50°C
- Charger Size In Amps
- Temperature Probe Length (25', 50', 100', 200')
- Battery Load Profile If Available
- Optional Features Such As
  - Protection Components: High KAIC Breakers, Switches, Fuses
  - Additional Digital Inputs
  - Grounding; Bus Bar, Lug
  - Treatments; Fungus Proofing, Static Proofing
  - Drip Shield; NEMA 1, NEMA 2

### COMPANION PRODUCTS

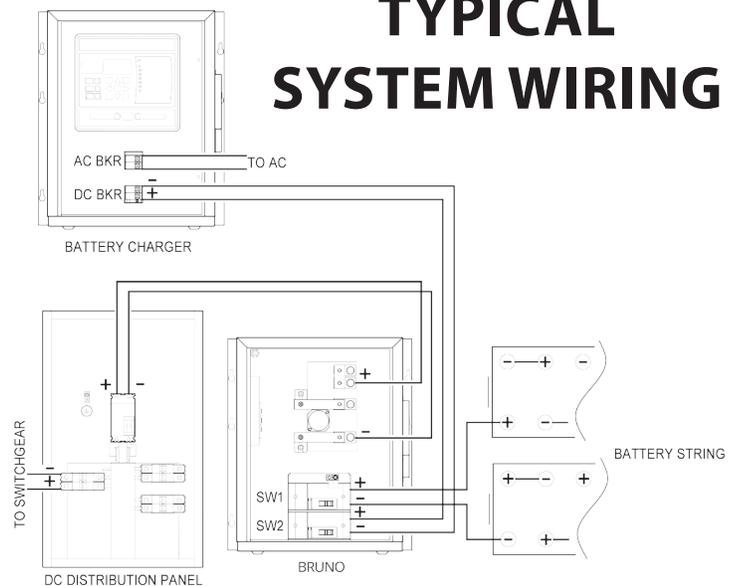
For optimum performance, pair your BRUNO DC System Watchdog with these companion products...



ATevo Battery Charger

DC Distribution Panel

### TYPICAL SYSTEM WIRING



FOR MORE INFORMATION:

PATENT PENDING

Call HindlePower at **610-330-9000** to speak with our professional and knowledgeable team.

Our staff is available Monday-Friday from 8:30am-4:30pm ET for phone assistance or online chat.

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All specifications subject to change.