



## How to Test the Health of Your Low Voltage Cabinet Batteries

Periodic tests to ensure battery health are highly recommended. Typically, batteries last from three to five years; however, circumstances can cause batteries to drain before their lifespan. Additional auxiliary devices on the battery circuit (such as a modem or radio transceiver), extreme weather conditions, or ACV interruption to the input of the PCD UPS module, can ultimately affect the battery lifespan. Battery tests can easily be performed via the PCD front panel, WinPCD T2 Software and SCADA. Call 1-800-929-7947 option 5 or +1-407-732-2000 extension 2510 for this issue or any other questions.

### Precautions

1. DO NOT SHORT CIRCUIT BATTERIES
2. Avoid deep cycling discharge of batteries
3. Ensure the battery temperature compensating Thermistor is connected to the UPS module "Temp Sensor" input terminals. The Thermistor is a 10 K Ohm Keystone Thermometrics type KC003T. If the Thermistor is open circuit, the battery charging circuit will overcharge the batteries.
4. Make sure the total continuous current draw, including the PCD and any other auxiliary device, does not draw greater than 1 A. This is the maximum current output from the UPS charger.
5. If UPS modules are interchanged from low voltage cabinets, i.e. from VR-3S to retrofit applications, make note of the J3 and J11 jumper settings. The jumper settings must match the battery source voltage: 48 VDC / 24 VDC.

### Instructions to test your batteries via the PCD front panel

The following instructions contain information required to test your batteries via the PCD front panel:

The PROG 1 Pushbutton Delta V test is the best way to check your battery's health. This test momentarily places a 1 ohm short across the battery circuit. The change in battery voltage (Delta V) tests the no-load voltage minus the loaded voltage and reports this value as a Delta V. A value of 10% or less of rated DC voltage is a good Delta V, i.e. 4.8 V or less is acceptable for a 48 VDC battery system. If the Delta V reads 99.00 V, then the batteries are discharged or need to be replaced.

### BATTERY TEST:

1. Press the ENTER KEY to access the MAIN MENU
2. Press the DOWN ARROW KEY to access TEST
3. Press the ENTER KEY to access the TEST MENU
4. Press the DOWN ARROW KEY to access BATTERY TEST MODE
5. Press the ENTER KEY to access UPS DIAGNOSTICS

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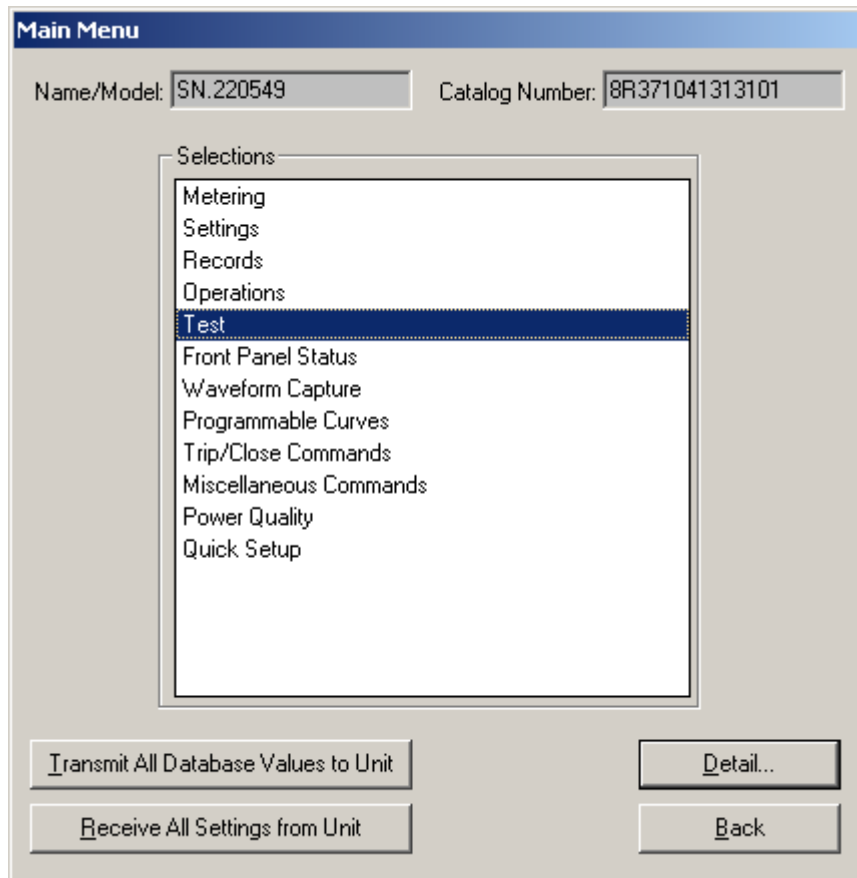


6. Scroll Down and note the following:  
Battery Temp: will display the batteries temperature in Celsius (C)  
Charge Voltage: nominal float voltage is 54 VDC at 25°C (Can vary from 64.8 VDC at -40°C to 52.8 VDC above +50°C)  
Charge Current: typically .25 A or less for a fully charged 48 VDC battery source.

### Instructions to test your batteries with WinPCDT2 Software

The following instructions contain information required to test your batteries with WinPCDT2 Software:

1. From the Main Menu select “Test”.



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2. From the Test Menu select “Battery Test”.

**Test Menu**

Name/Model: SN.220549      Catalog Number: 8R371041313101

Selections

- Physical I/O Status
- Logical Input Status
- Logical Output Status
- Output Contacts
- Front Panel Status
- Target Status
- Battery Test**
- Breaker Status

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3. The Battery Test will be performed

**Battery Test (Connected)**

Charging Voltage: 65.83 Volts

Charging Current Amps: 0.12 Amps

Temperature: 602.91 deg. C

Test Delta Voltage: 99 Volts

(Test allowed again 1.83 minutes)

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### Instructions to test your batteries via DNP/SCADA

The following instructions contain information required to test your batteries via DNP/ SCADA:

See the PCD, DNP 3.0 Protocol Document.

DNP Analog Input Points 87 thru 90 provide UPS Battery data.

DNP 3.0 Implementation Details for the ABB PCD 2000  
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**Analog Inputs**  
Static (Steady-State) Object Number: 30  
Change Event Object Number: 32  
Request Function Codes supported: 1 (read)  
Static Variation reported when variation 0 requested: 2 (16-Bit Analog Input)  
Change Event Variation reported when variation 0 requested: 2 (Analog Change Event w/o Time)

Point Index	Name/Description	Scaling (representation of 32767)	Change Event Assigned Class (1, 2, 3 or none)	Static Data (Class 0) Scan Type Group
79	Minimum KWan	32767 KWatts	2	22
80	Minimum KWbn	32767 KWatts	2	22
81	Minimum KWcn	32767 KWatts	2	22
82	Minimum KW3	32767 KWatts	2	22
83	Minimum KVAAn	32767 KVAR	2	22
84	Minimum KVABn	32767 KVAR	2	22
85	Minimum KVACn	32767 KVAR	2	22
86	Minimum KVA3	32767 KVAR	2	22
87	UPS Battery Voltage	655.34 Volts	2	22
88	UPS Battery Charging Current	655.34 Amps	2	22
89	UPS Battery Temperature	327.67 C	2	22
90	UPS Battery Test Delta Voltage	655.34 Volts	2	22
91	Last Fault: Record Number	65534	2	23
92	Last Fault: Faulted Device	See Table 5.4.1	2	23
93	Last Fault: Settings Group / Sequence Number	See Table 5.4.2	2	23
94	Last Fault: Line Parameter	See Table 5.4.3	2	23
95	Last Fault: Year	32767 Years	2	23
96	Last Fault: Month	32767 Months	2	23

Call 1-800-929-7947 x 5 or +1-407-732-200 x 2510 for any other questions you may have.

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