



STT SOLUTIONS

Test Procedure Configure Eltek 12V Battery Chargers

Procedure No.: T17
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Revision: 1
Approved: F. Foley

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1 Eltek Chargers Set-Up

1.1 Initial Set-Up Process

- 1.1.1 Connect an Ethernet Cable into the port on the controller card of the charger, the other end of the Ethernet cable must be attached to our internal network switch.
- 1.1.2 Run the Eltek Network Utility on the Desktop (Download this from Eltek if you do not have a copy) and click on the search key located on the top left hand corner of the application. See Figure 1. Eltek Network Utility Search Screen below.

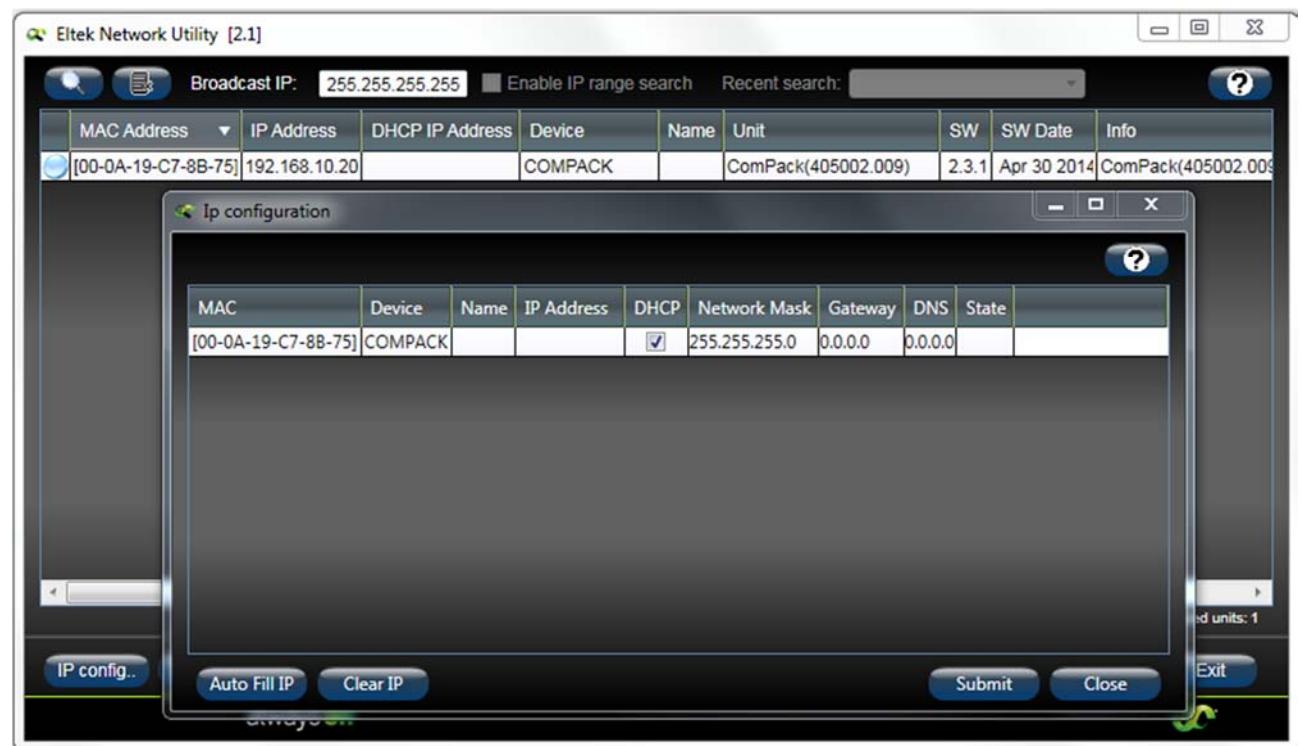


Figure 1. Eltek Network Utility Search Screen

- 1.1.3 Highlight the Controller and click on IP config button located on the bottom left hand corner then click the DHCP box as shown in Figure 1. Eltek Network Utility Search Screen then

press the submit button.

1.2 Configuration Settings

- 1.2.1 Press the Clear Device List Button located alongside the Search button the search again for the controller (note you may have to do this a few times), when it's click on the device this will open the device in your preferred Internet Browser, this will permit access to the controller settings the User Name and password is admin and the Password is admin.

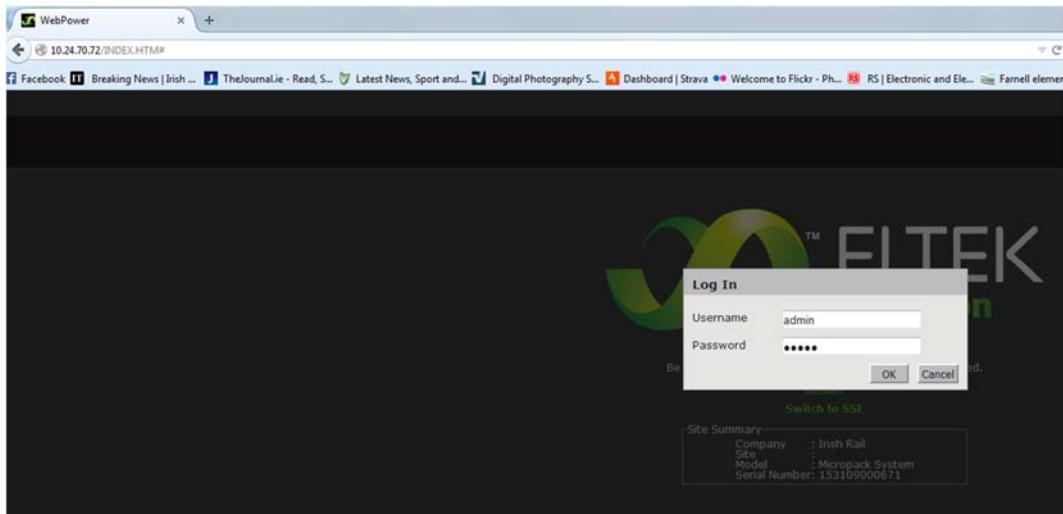


Figure 2. Log In Screen

- 1.2.2 On the System Configuration tab change the settings to those shown in Figure 3. Mains Configuration and make changes as per the other screen shots in:

Figure 4. System Voltages Lead Acid Batteries

Or Figure 5. System Voltages 9 x Ni-CAD cells (Note set Number of Battery Cells to 6, but compensate on cell voltages)

Figure 6. System Global Settings

Figure 7. Rectifier Configuration

Figure 8. Battery Configuration

Figure 9. Battery Boost Setting for Lead Acid Batteries

Or Figure 10. Battery Boost Settings for Ni-CAD Batteries

Figure 11. Battery Equalize Settings for Lead Acid Batteries

Or Figure 12. Battery Equalize Settings for Ni-CAD Batteries

Figure 13. Alarm Configuration Outputs

Figure 14. Mains Input Alarm Configuration

Figure 15. Rectifiers Alarm Configuration

Figure 16. Rectifiers Communication Alarm

Figure 17. Alarm Configuration - Lead Acid Battery Voltage

Or Figure 18. Alarm Configuration - Ni-CAD Battery Voltage

Figure 19. Battery Temperature Alarm Settings

Figure 20. Battery Quality Alarm Settings

Figure 21. Control System Alarm Settings

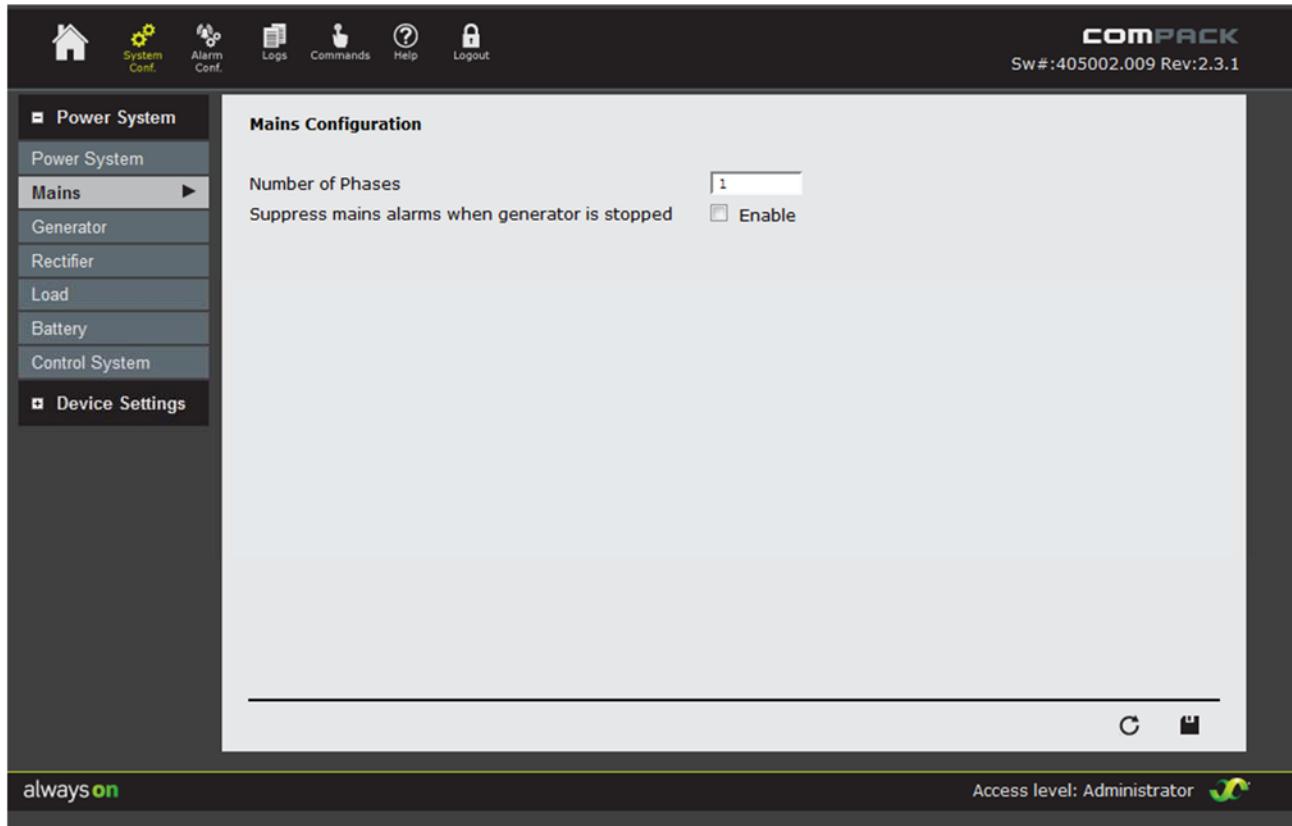
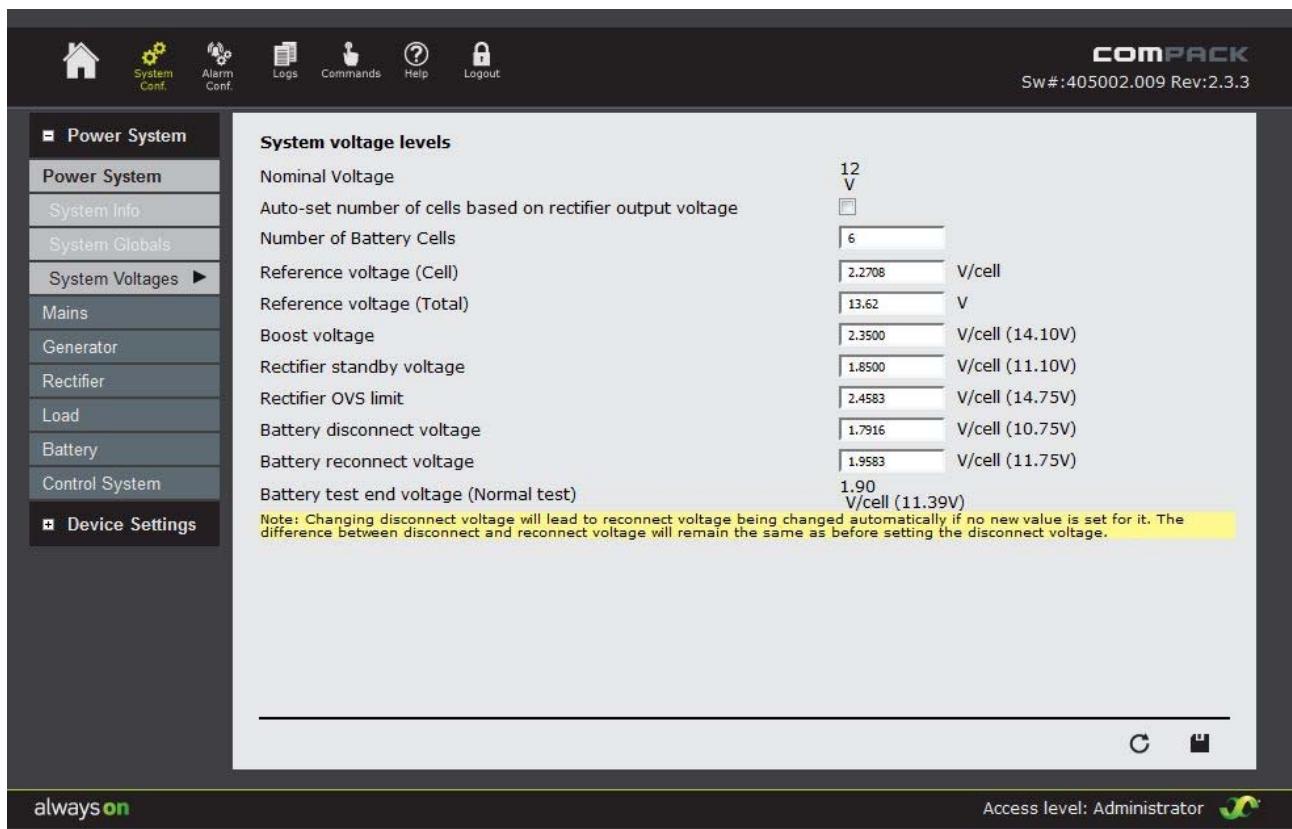


Figure 3. Mains Configuration

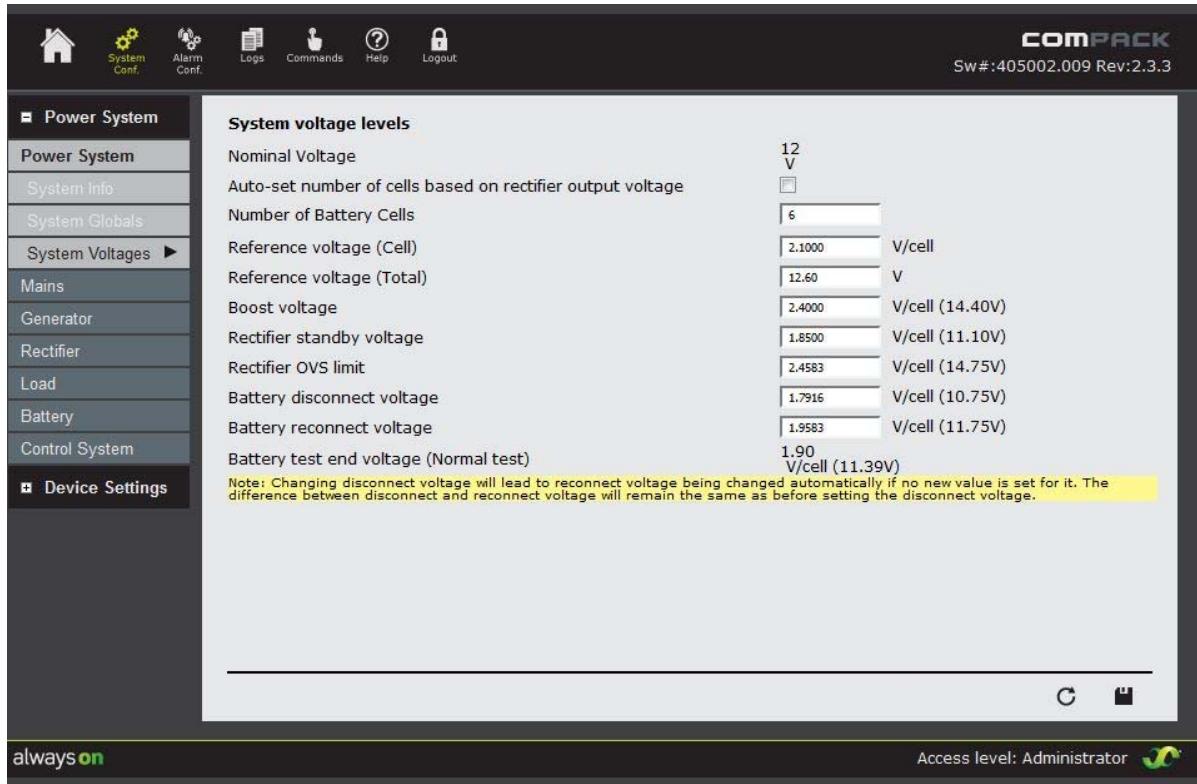


System voltage levels

Nominal Voltage	12 V
Auto-set number of cells based on rectifier output voltage	<input type="checkbox"/>
Number of Battery Cells	6
Reference voltage (Cell)	2.2708 V/cell
Reference voltage (Total)	13.62 V
Boost voltage	2.3500 V/cell (14.10V)
Rectifier standby voltage	1.8500 V/cell (11.10V)
Rectifier OVS limit	2.4583 V/cell (14.75V)
Battery disconnect voltage	1.7916 V/cell (10.75V)
Battery reconnect voltage	1.9583 V/cell (11.75V)
Battery test end voltage (Normal test)	1.90 V/cell (11.39V)

Note: Changing disconnect voltage will lead to reconnect voltage being changed automatically if no new value is set for it. The difference between disconnect and reconnect voltage will remain the same as before setting the disconnect voltage.

Figure 4. System Voltages Lead Acid Batteries

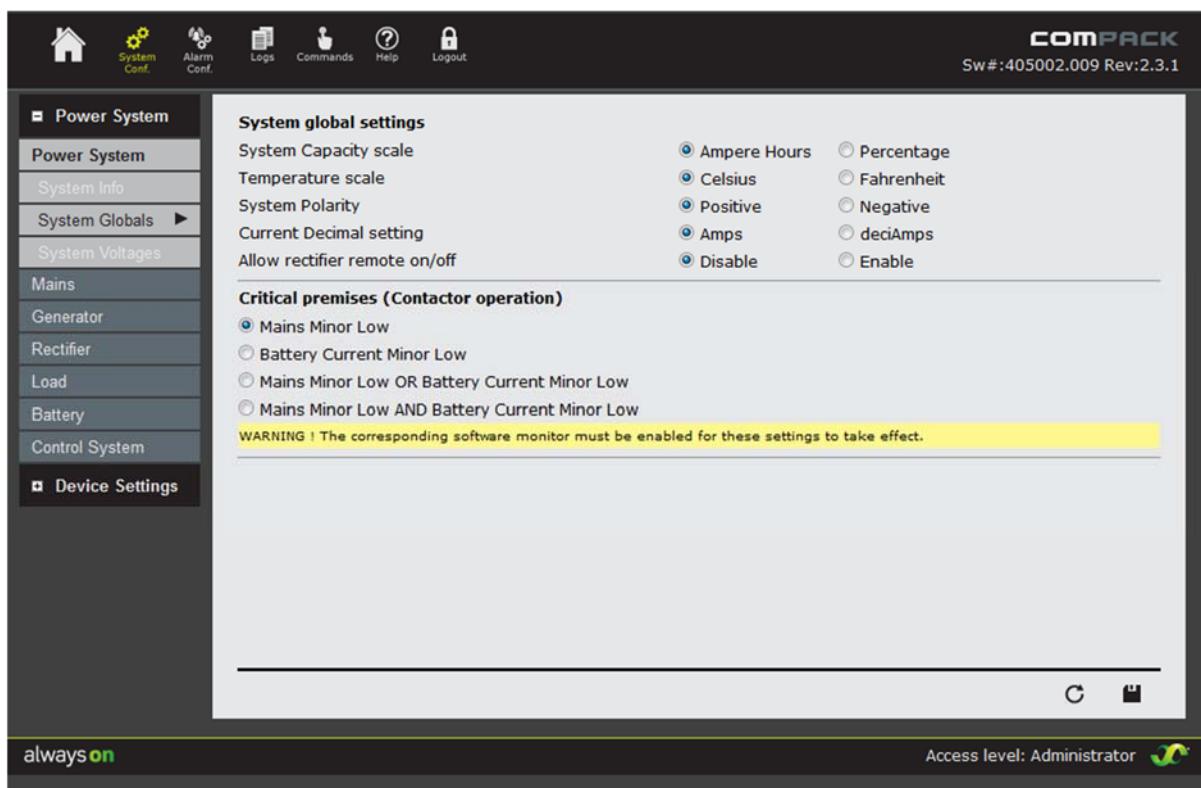


System voltage levels

Nominal Voltage	12 V
Auto-set number of cells based on rectifier output voltage	<input type="checkbox"/>
Number of Battery Cells	6
Reference voltage (Cell)	2.1000 V/cell
Reference voltage (Total)	12.60 V
Boost voltage	2.4000 V/cell (14.40V)
Rectifier standby voltage	1.8500 V/cell (11.10V)
Rectifier OVS limit	2.4583 V/cell (14.75V)
Battery disconnect voltage	1.7916 V/cell (10.75V)
Battery reconnect voltage	1.9583 V/cell (11.75V)
Battery test end voltage (Normal test)	1.90 V/cell (11.39V)

Note: Changing disconnect voltage will lead to reconnect voltage being changed automatically if no new value is set for it. The difference between disconnect and reconnect voltage will remain the same as before setting the disconnect voltage.

Figure 5. System Voltages 9 x Ni-CAD cells (Note set Number of Battery Cells to 6, but compensate on cell voltages)



System global settings

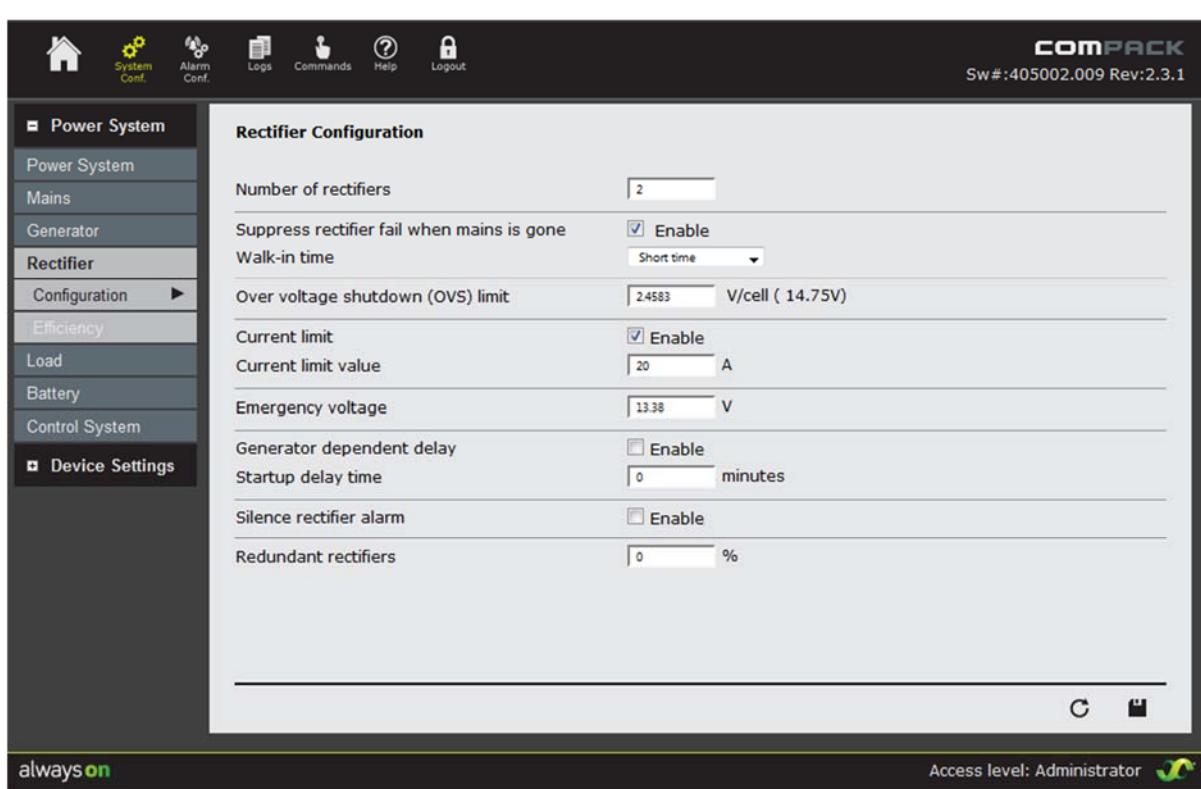
- System Capacity scale: Ampere Hours Percentage
- Temperature scale: Celsius Fahrenheit
- Current Decimal setting: Amps deciAmps
- Allow rectifier remote on/off: Disable Enable

Critical premises (Contactor operation)

- Mains Minor Low
- Battery Current Minor Low
- Mains Minor Low OR Battery Current Minor Low
- Mains Minor Low AND Battery Current Minor Low

WARNING ! The corresponding software monitor must be enabled for these settings to take effect.

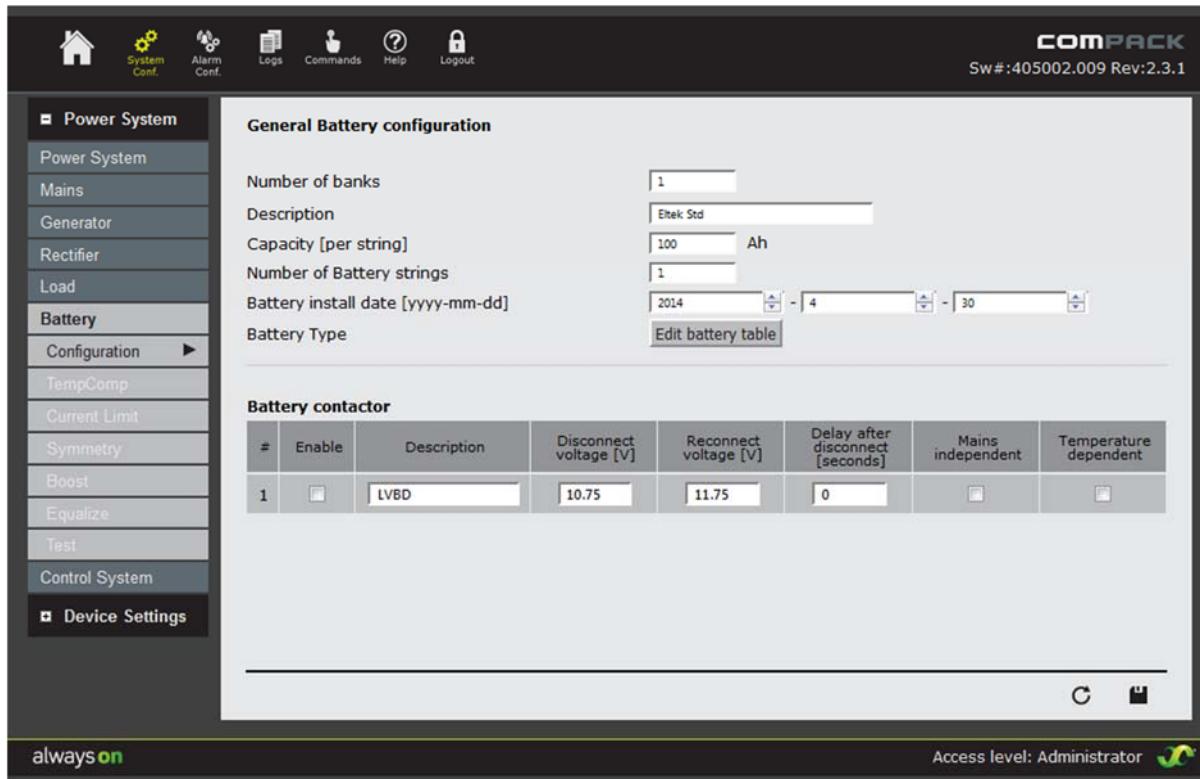
Figure 6. System Global Settings



Rectifier Configuration

- Number of rectifiers: 2
- Suppress rectifier fail when mains is gone: Enable
- Walk-in time: Short time
- Over voltage shutdown (OVS) limit: 2.4583 V/cell (14.75V)
- Current limit: Enable
- Current limit value: 20 A
- Emergency voltage: 13.38 V
- Generator dependent delay: Enable
- Startup delay time: 0 minutes
- Silence rectifier alarm: Enable
- Redundant rectifiers: 0 %

Figure 7. Rectifier Configuration



General Battery configuration

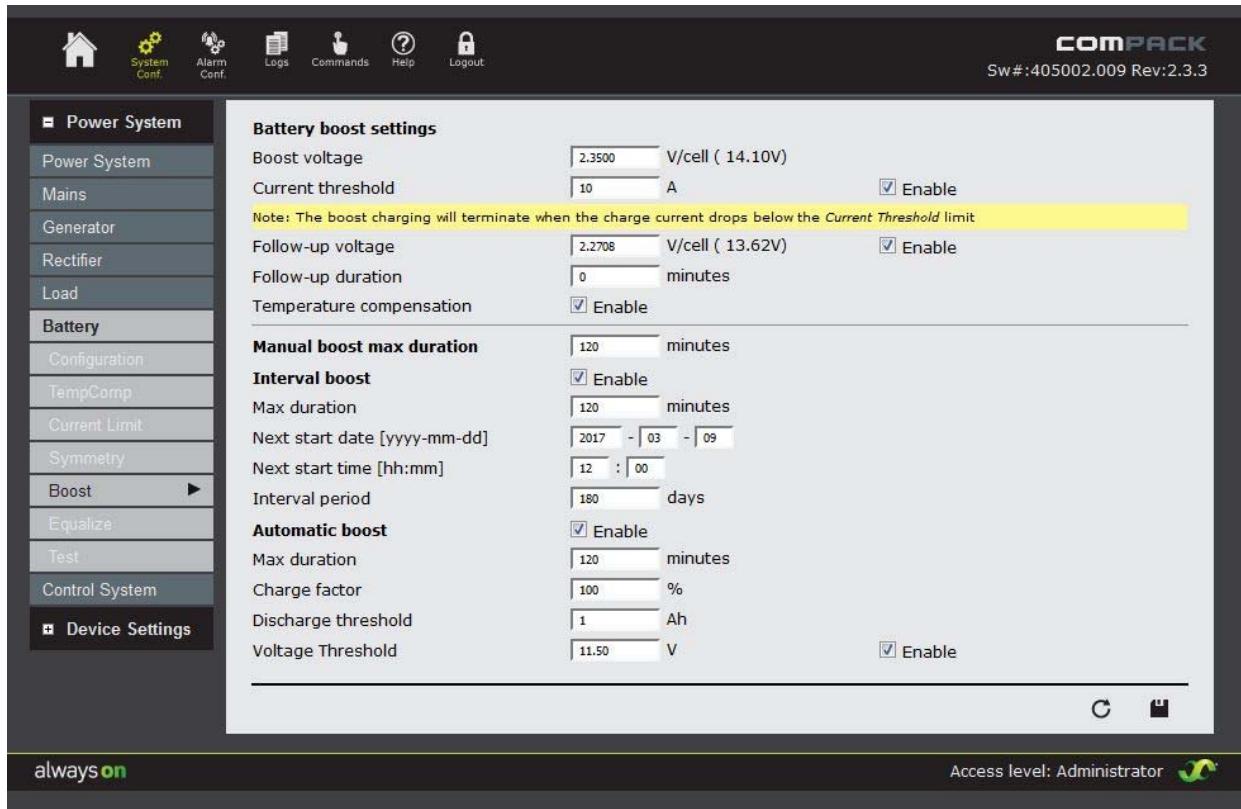
Number of banks	1
Description	Eltek Std
Capacity [per string]	100 Ah
Number of Battery strings	1
Battery install date [yyyy-mm-dd]	2014 - 4 - 30
Battery Type	Edit battery table

Battery contactor

#	Enable	Description	Disconnect voltage [V]	Reconnect voltage [V]	Delay after disconnect [seconds]	Mains independent	Temperature dependent
1	<input type="checkbox"/>	LVBD	10.75	11.75	0	<input type="checkbox"/>	<input type="checkbox"/>

Access level: Administrator

Figure 8. Battery Configuration



Battery boost settings

Boost voltage	2.3500 V/cell (14.10V)
Current threshold	10 A <input checked="" type="checkbox"/> Enable
Note: The boost charging will terminate when the charge current drops below the Current Threshold limit	
Follow-up voltage	2.2708 V/cell (13.62V) <input checked="" type="checkbox"/> Enable
Follow-up duration	0 minutes
Temperature compensation	<input checked="" type="checkbox"/> Enable

Manual boost max duration

120 minutes

Interval boost

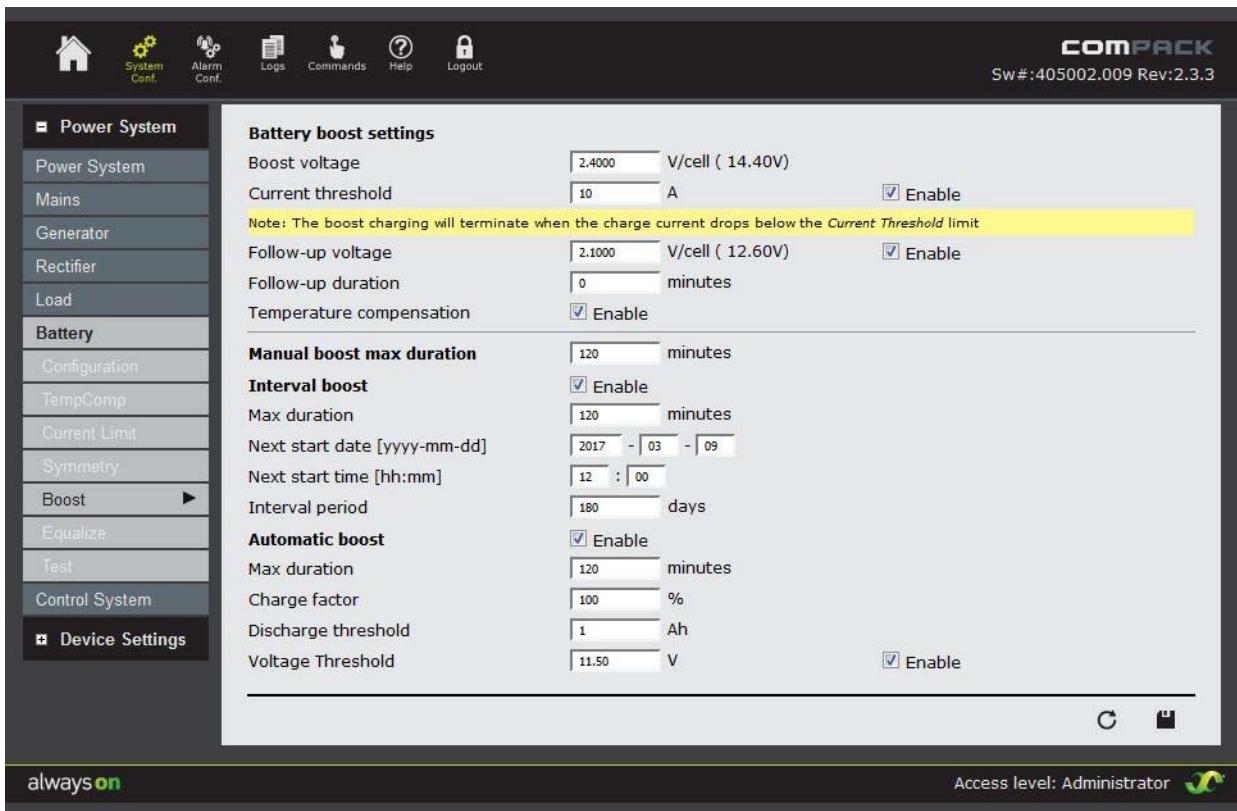
<input checked="" type="checkbox"/> Enable	
Max duration	120 minutes
Next start date [yyyy-mm-dd]	2017 - 03 - 09
Next start time [hh:mm]	12 : 00
Interval period	180 days

Automatic boost

<input checked="" type="checkbox"/> Enable	
Max duration	120 minutes
Charge factor	100 %
Discharge threshold	1 Ah
Voltage Threshold	11.50 V <input checked="" type="checkbox"/> Enable

Access level: Administrator

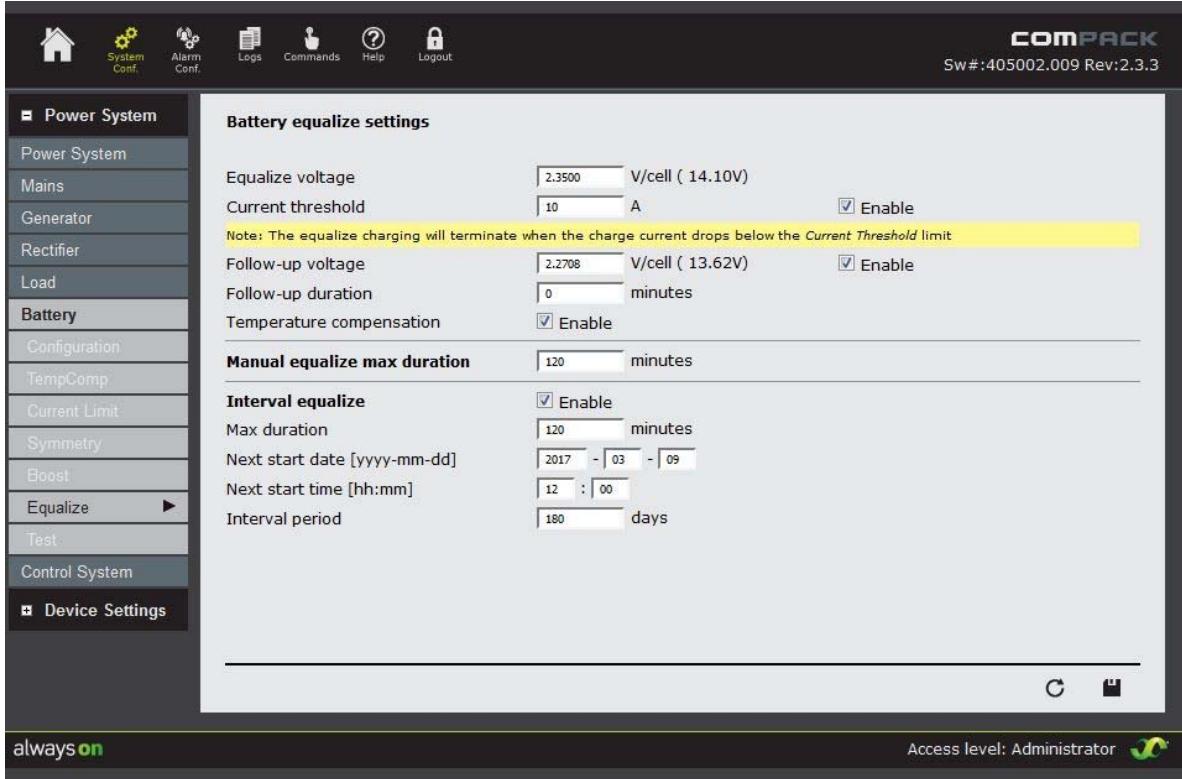
Figure 9. Battery Boost Setting for Lead Acid Batteries



The screenshot shows the COMPACK software interface with the title "Battery boost settings". The left sidebar has a "Control System" section selected. The main area contains the following configuration:

- Battery boost settings:**
 - Boost voltage: 2.4000 V/cell (14.40V)
 - Current threshold: 10 A Enable
 - Note: The boost charging will terminate when the charge current drops below the Current Threshold limit.
 - Follow-up voltage: 2.1000 V/cell (12.60V) Enable
 - Follow-up duration: 0 minutes
 - Temperature compensation: Enable
- Manual boost max duration:** 120 minutes
- Interval boost:** Enable
 - Max duration: 120 minutes
 - Next start date [yyyy-mm-dd]: 2017 - 03 - 09
 - Next start time [hh:mm]: 12 : 00
 - Interval period: 180 days
- Automatic boost:** Enable
 - Max duration: 120 minutes
 - Charge factor: 100 %
 - Discharge threshold: 1 Ah
 - Voltage Threshold: 11.50 V Enable

Figure 10. Battery Boost Settings for Ni-CAD Batteries



The screenshot shows the COMPACK software interface with the title "Battery equalize settings". The left sidebar has an "Equalize" section selected. The main area contains the following configuration:

- Battery equalize settings:**
 - Equalize voltage: 2.3500 V/cell (14.10V)
 - Current threshold: 10 A Enable
 - Note: The equalize charging will terminate when the charge current drops below the Current Threshold limit.
 - Follow-up voltage: 2.2708 V/cell (13.62V) Enable
 - Follow-up duration: 0 minutes
 - Temperature compensation: Enable
- Manual equalize max duration:** 120 minutes
- Interval equalize:** Enable
 - Max duration: 120 minutes
 - Next start date [yyyy-mm-dd]: 2017 - 03 - 09
 - Next start time [hh:mm]: 12 : 00
 - Interval period: 180 days

Figure 11. Battery Equalize Settings for Lead Acid Batteries

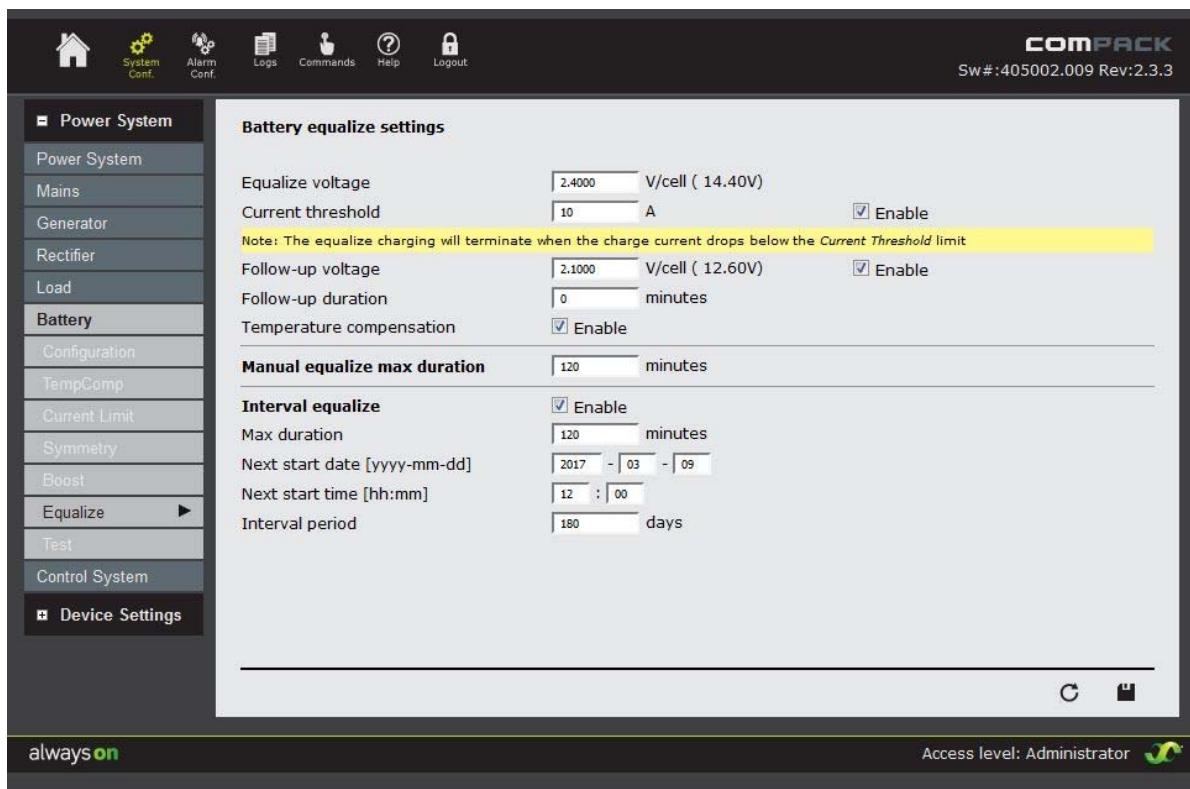


Figure 12. Battery Equalize Settings for Ni-CAD Batteries

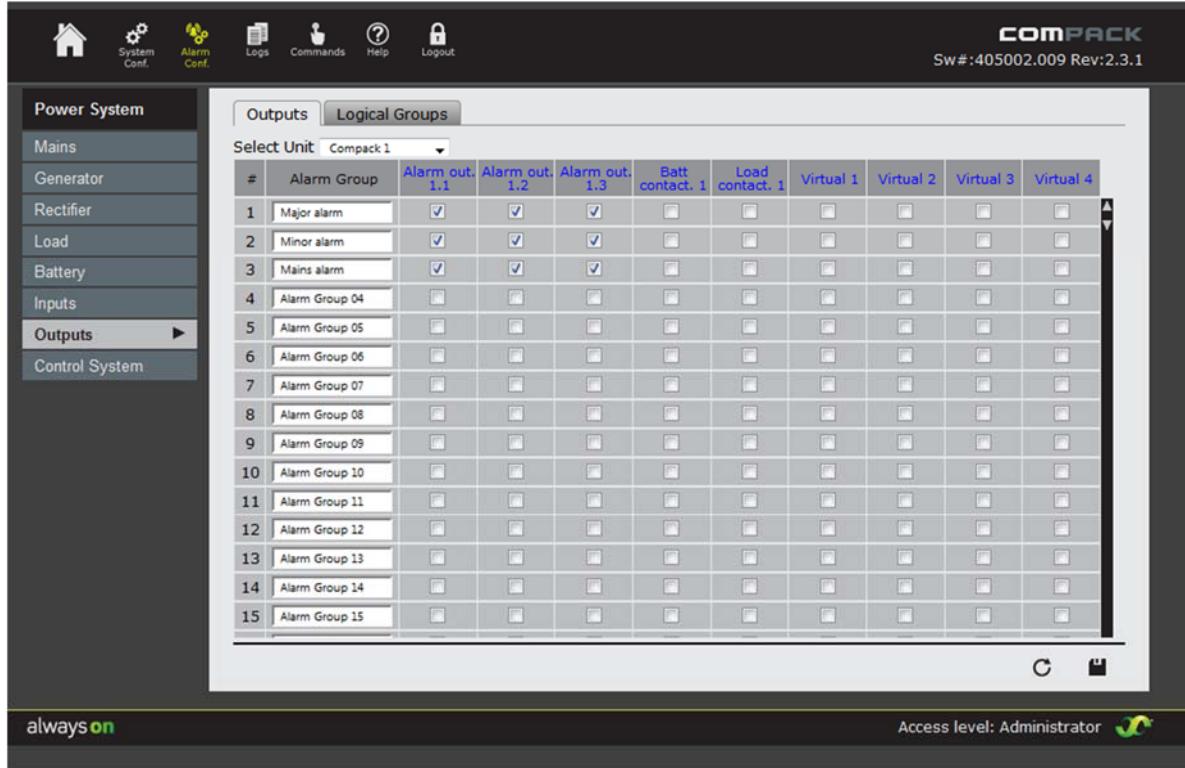


Figure 13. Alarm Configuration Outputs

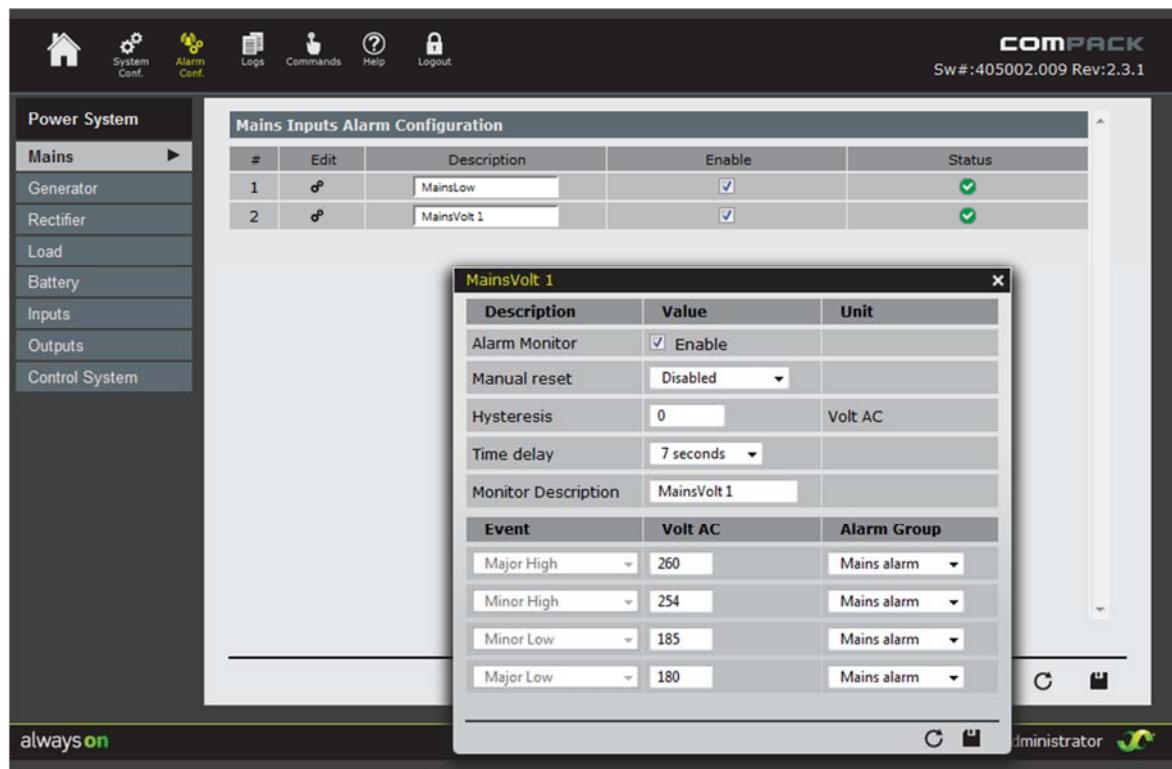


Figure 14. Mains Input Alarm Configuration

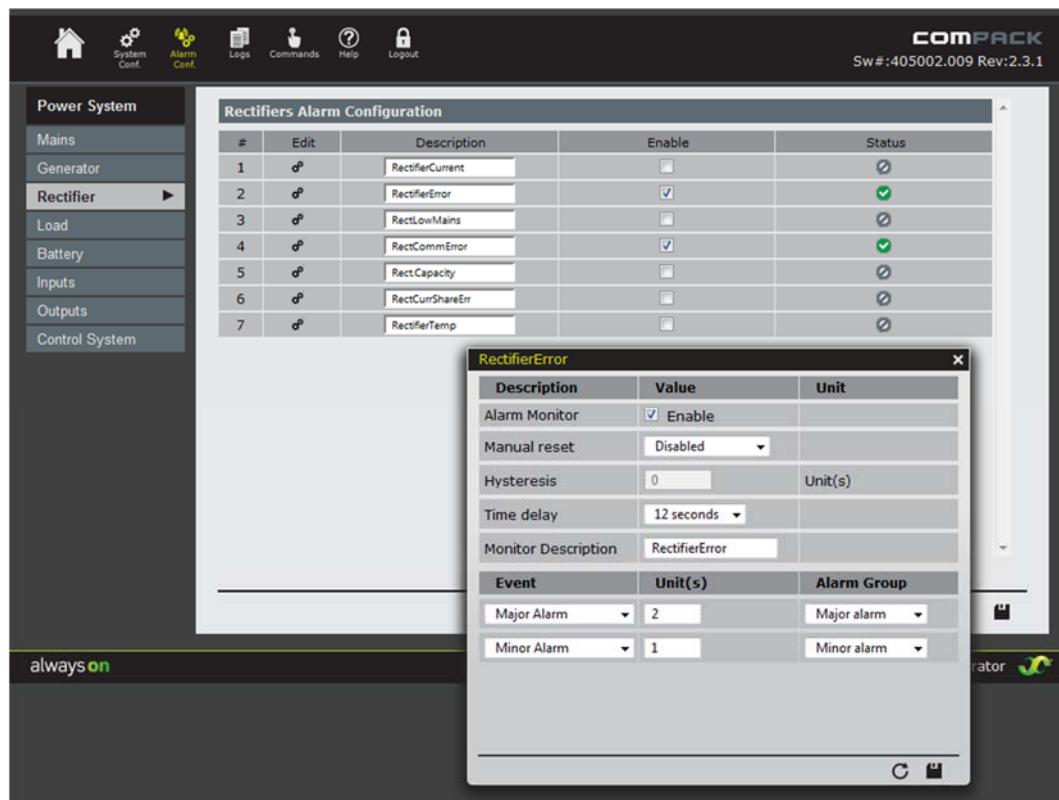


Figure 15. Rectifiers Alarm Configuration

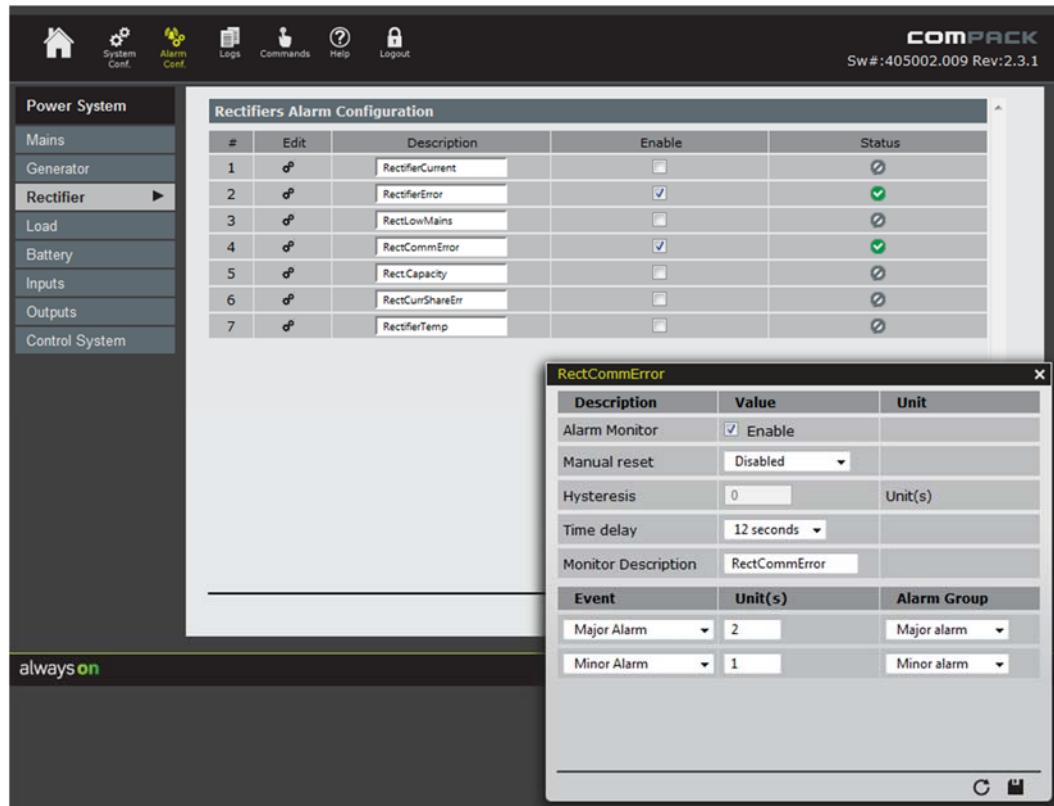


Figure 16. Rectifiers Communication Alarm

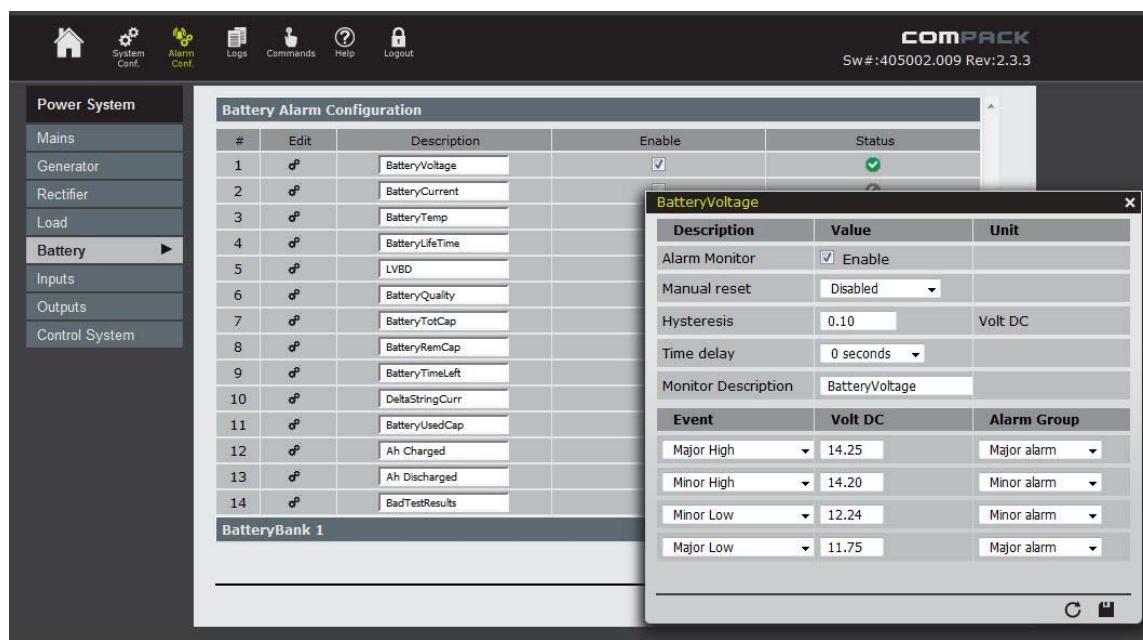


Figure 17. Alarm Configuration - Lead Acid Battery Voltage

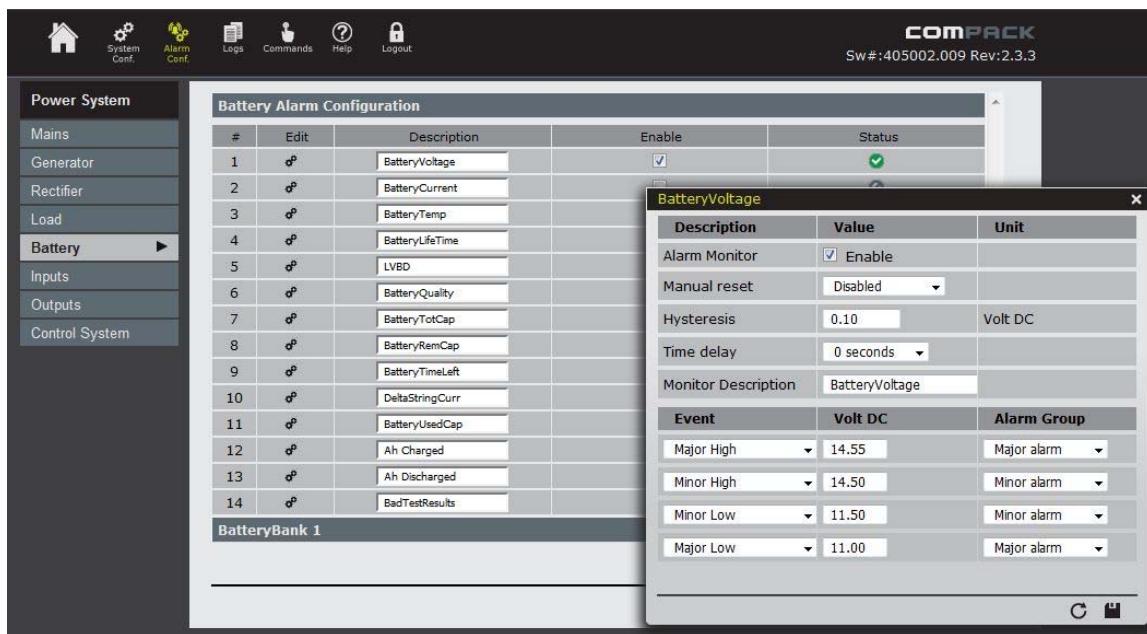


Figure 18. Alarm Configuration - Ni-CAD Battery Voltage

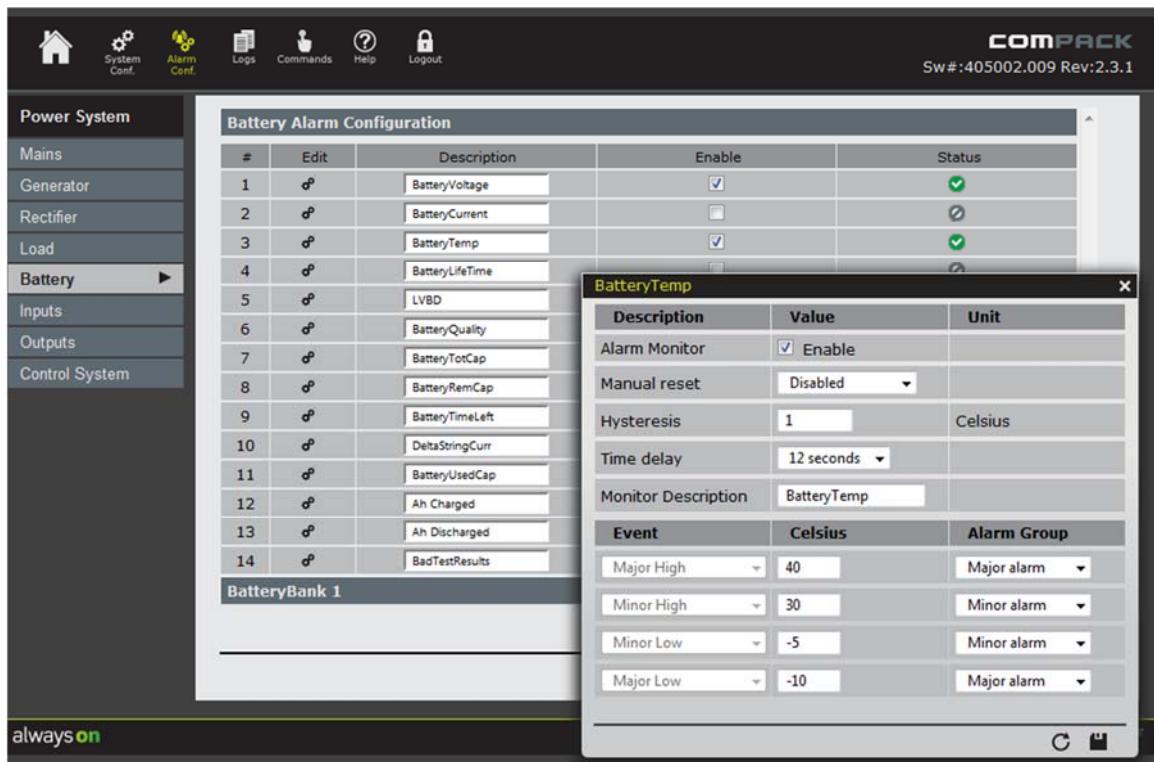


Figure 19. Battery Temperature Alarm Settings

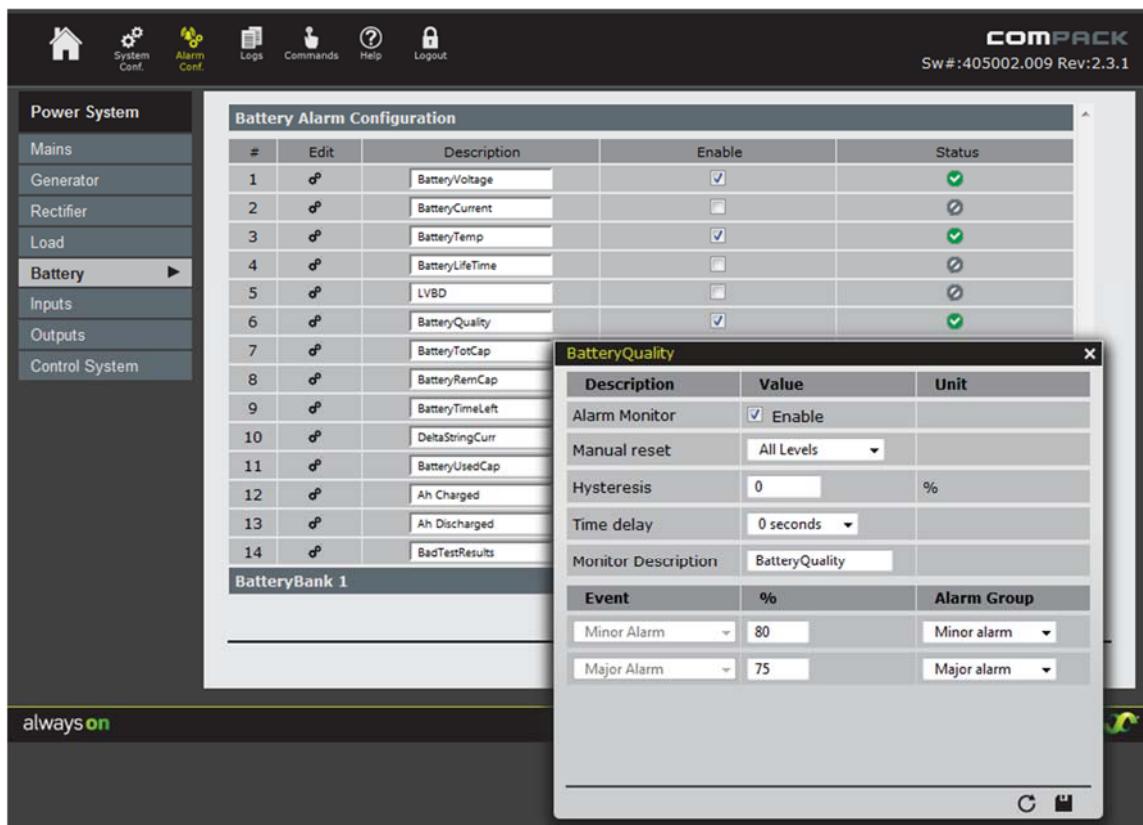


Figure 20. Battery Quality Alarm Settings

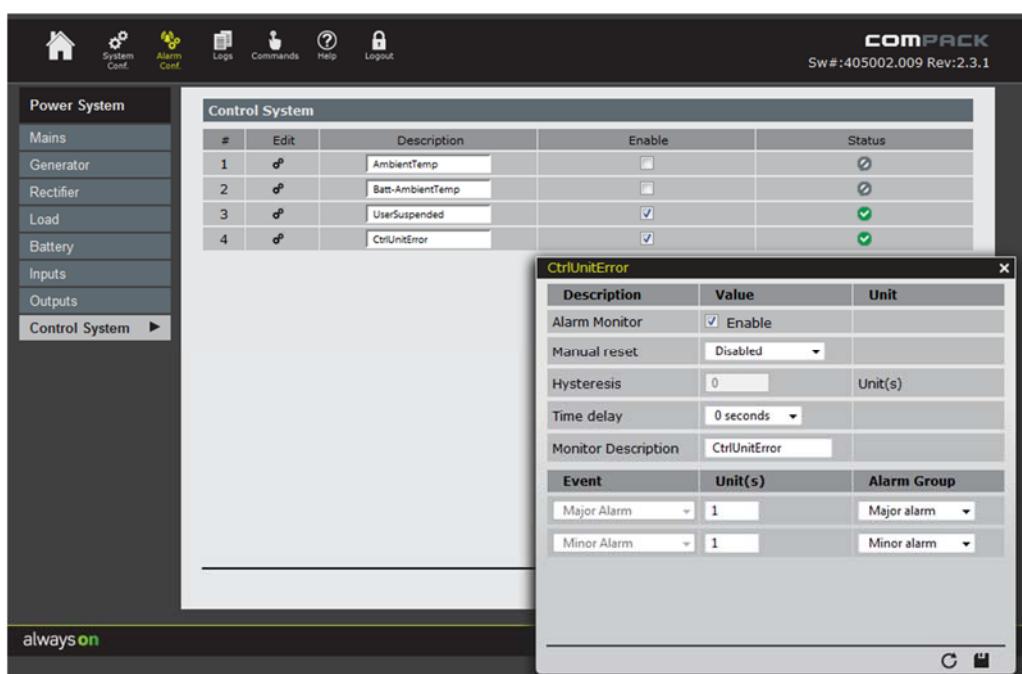


Figure 21. Control System Alarm Settings

2 Modifications and Module Removal

2.1 Earth Modification

- 2.1.1 The Earth tab must be isolated from the positive pin as shown in Figure 22. Grounding Leg and left standing free.



Figure 22. Grounding Leg

2.2 Coding Pin Modification

- 2.2.1 Modify the yellow coding pins on all spaces to match those shown in Figure 23. Coding Pin Modification

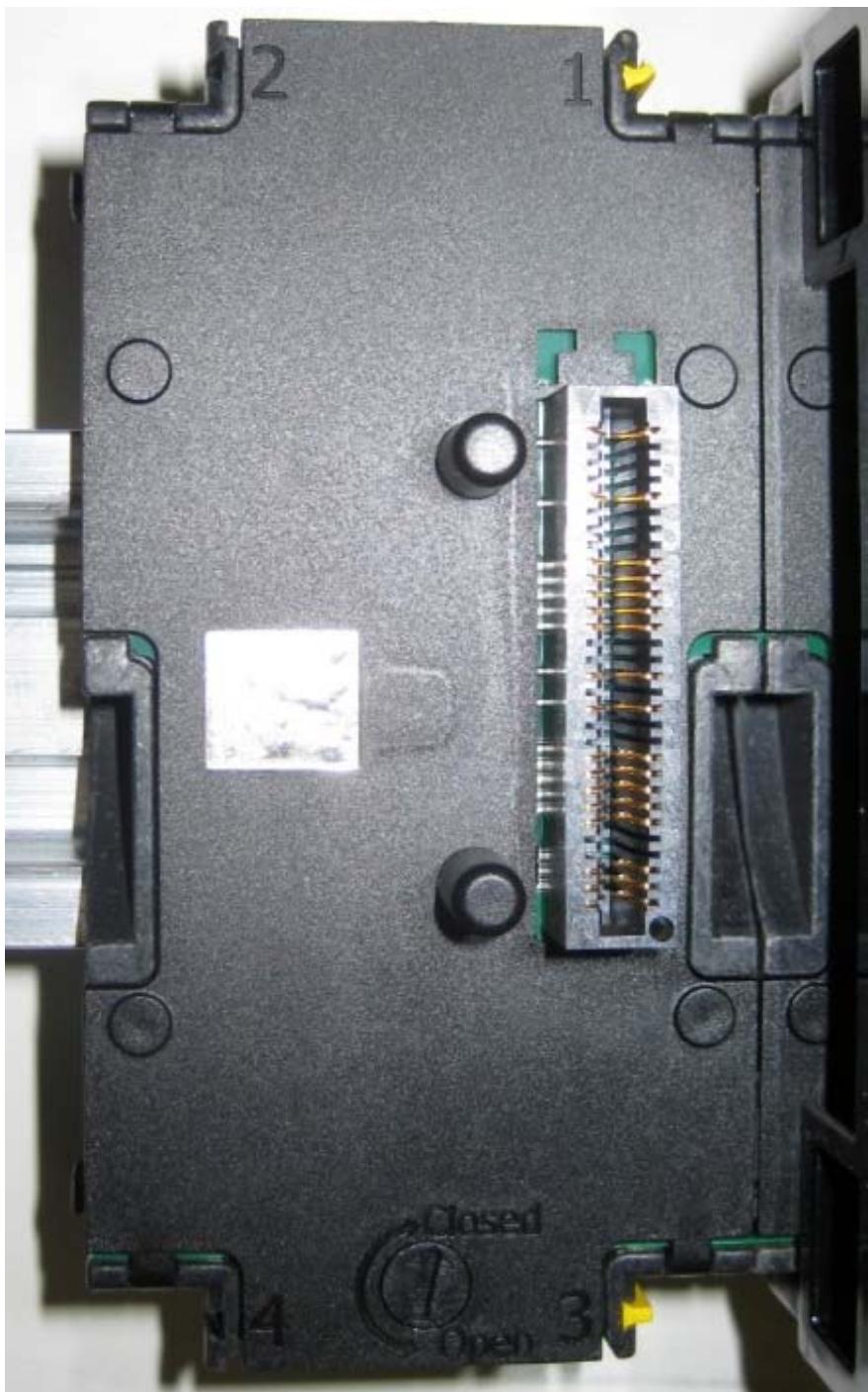


Figure 23. Coding Pin Modification

2.3 Module Removal

- 2.3.1 In order to remove a module insert an appropriate size flat screw driver as shown in Figure 24. Module Removal to release the catch.



Figure 24. Module Removal