Lithium Setup - ePOWER Single 12v - 2018-G2

26/10/2018

Enerdrive
DRIVING YOUR ENERGY NEEDS

NOTE:
Long term storage switch.
Only turn this switch OFF once the batteries are fully charged, the Yellow Latching Relay is disengaged and all charging sources have been shut down correctly.

Optional Cabinet Fan
Output 4 Turns on when
Temp Sensor >35°C

Temp Sensor

EN3TOR-G2

Set DipSwitch to:
Standard Program

SR-TS-TOR-G2
TOR Output

5A
10A
1A

WHITE
BLUE
BLACK
RED
GREEN
YELLOW

SR-TS-TOR-G2
Wire to:
RTS Terminal

EN3TOR-G2
Plug into BTS

EN3TOR-G2
Plug into BTS

Inverter +

Inverter -

DC LOADS +
DC LOADS +
COMMON NEG

EPL-ABS

Voltage Protection Circuit

Battery Connection

Balancer Link N/A

NOTE:
If using Dual Batteries in Parallel or Series please refer to:
* Parallel 12v setup drawing
* Series 24v setup drawing

Battery -
BLACK
YELLOW/GREEN
WHITE
BLUE
RED
Battery +

Min 95mm² Cable with a Max length of 1.5m from Battery to Connection Board.

WARNING!
EPL-ABS
1.Voltage protection circuit must be connected prior to connecting the Battery connection Plug.

2. Never disconnect Battery connection wires from the battery while the lead is connected to the EPL-ABS box.

Enerdrive has provided this drawing as a guide only and installers must ensure the system is installed to the local requirements for fuse protection and wire sizing.
If you have any questions please call;
Enerdrive on 07 3390 6900

To Install & Commission Your Lithium System Please Complete The Following Steps.

FOR USE WITH ALL SYSTEM INSTALLATIONS

1. **Prior to Installation**please make sure you have the correct wiring diagram for your installation and the Main Battery Latching relay is in the OFF Position (Yellow button flush with the top of the switch).
2. Make sure the Dip Switch on the right hand side of the Enerdrive ADV-BMS Relay Driver is set to Program A.
3. Leave the main battery cables disconnected until complete.
4. Connect all DC & AC cables for the system taking note that the polarity is correct, Especially on the BMS Relay Driver.
5. All Positive DC cables for DC LOADs & Inverters are to be on the "SYSTEM" side of the Main Battery Latching Relay.
6. All Positive DC cables from the Enerdrive approved battery chargers & Tristar Solar to be installed on the "BATTERY" side of the Main Battery Latching Relay.
7. Make sure all High & Low protection cables to the Advance BMS Relay Driver from the Battery, Battery Monitor and all charging devices have been installed as per wiring diagram.
8. Make sure all High & Low protection cables to the Advance BMS Relay Driver from both the Battery & Battery Monitor have been installed as per the wiring diagram.
9. Connect DC Cables to the Battery.

LITHIUM COMMISSIONING CHECK SHEET

Refer Fault Finding Codes 1 Thru 11 Refer To Enerdrive Advanced Relay Driver And Charging Sources.

		YES	NO	
1	On activating the Long Term Storage Switch, does the GREEN – DC Power, Input 1,2,3 LEDs on the BMS Relay Driver come on?	☐	☐	see: F1
2	Engage the Main Battery Latching Relay – does the GREEN LED for the "Latching Relay" come on? *Please Note: If using an ePRO Combi Inverter/Charger, switch the rocker switch on the front of the unit to the ON position (number 1)*	☐	☐	see: F2
3	Remove the connector from Input 1 –the Green LED for Input 1 will now be off and the Status LED will start flashing GREEN?	☐	☐	see: F3
4	After a 40s delay, all TOR Outputs and Outputs 1-3 LEDs will come on (Red) and disengage all connected sources. Within a further 15s, the Main Battery Latching Relay will disengage. Within a further 10s all TOR Outputs and Outputs 1 & 2 LED's will go out turning all connected sources back on? Output 3 LED will still be on (RED) for an additional 30mins to keep a connected ePRO Combi inverter "Locked Out" to allow for the battery to charge before inverter use is possible. If an ePRO Combi is fitted, the "Inverter" LED on the front of the Combi unit should show RED? *Please Note: If using an ePRO Combi Inverter/Charger, Output 3 LED will still be on (RED) for an additional 30mins to keep the inverter "Locked Out". The "Inverter" LED on the front of the Combi unit will show RED?*	☐	☐	see: F4
5	Replace the connector back into Input 1 –the GREEN LED for Input 1 will turn on. If so, remove the DC Power Input connector on the Advanced Relay Driver and re-insert to reset the Advance Relay Driver to bypass the 30min delay on the inverter lock out to continue the commissioning process and re-engage the Main Battery Latching Relay.	☐	☐	see: F5
6	Input 2 commissioning process is the same as Input 1. Follow steps 3/4/5/ for Input 2 before proceeding to Step 7.	☐	☐	
7	Remove the connector from Input 3 – the Status LED will be now flashing Red and the Green LED for Input 3 will now be off? *Please Note: The 10 minute "stop charge" program is now engaged. Questions 8 thru 10 to be completed within the 10min program.*	☐	☐	see: F7
8	Did all TOR Outputs and Output LED's 1-2 turn on RED?	☐	☐	see: F8
9	Do all connected charge sources show a Fault Code on their respective screens?			
	If using an Enerdrive ePOWER AC charger – (Fault Code – E06)	☐	☐	see: F9A
	If using an Enerdrive DC2DC charger – (Fault Code – E07)	☐	☐	see: F9B
	If using Morningstar Tristar - Fault Code - LEDs on the front of the controller will be flashing Red/Green	☐	☐	see: F9C
	If using an ePRO Combi Inverter/Charger, did the Combi "Charger" LED Turn RED	☐	☐	see: F9D
10	Replace the connector back into Input 3 –the GREEN LED for Input 3 will turn on and the Status LED will go out after the 10 minute "stop charge" program has run?	☐	☐	see: F10
11	From Question 7, The 10 minute "stop charge" program was engaged to shut down the charging sources. After 10mins from initiation – did all TOR Outputs and Outputs 1 & 2 LED's turn off and did all connected charge source Fault Codes disappear?	☐	☐	see: F11
12	Do all charging sources return to normal operation status?	☐	☐	see: F12
13	Switch on the AC Mains charging source and fully charge the battery until the battery monitor reads 100% to synchronise the Battery Monitor. Ensure all Enerdrive ePOWER (if installed) & DC2DC chargers are set to "Lithium" and programmed accordingly	☐	☐	

If you have answered YES to all questions, congratulations , your Lithium System is ready for use!
Please fill out relative information below and supply a copy to the end user.

Customer/End User Name if known.
VIN Number

Battery Serial Number (found on battery case)

Installer Details

Date Commissioned

Fault Finding.	
F1	**A:** Does the power circuit for the Enerdrive ADV-BMS Relay driver have a 10amp fuse in it? **B:** Check polarity of the "Power Input" in the Advanced BMS Relay Driver. If it is Reverse Polarity you will need to replace the Advanced Relay Driver as internal damge has occurred.
F2	Check that all wires are connected between the Blue Sea Latching Relay and the Advanced Relay driver if this is correct and LED still does not light up - call Enerdrive.
F3	Make sure the connector is completely removed. If LED does not go out - Call Enerdrive.
F4	**A:** Check that all wires are connected between the Blue Sea Latching Relay and the Advanced Relay driver. **B:** Does the Advanced Relay Driver still have power?..Check the fuse. **C:** If all wiring is ok - Call Enerdrive. *Please note: If using the Combi Temp Sensor for Cabinet Fan operation from Program Relay 2 as per diagram, please connect this sensor and the EPC-TOR sensor lead into a 6C6P Splitter Box as shown on the wiring diagram.*
F5	**A:** Make sure wire is connected correctly. **B:** If all wiring is ok - Call Enerdrive.
F7	If Input 3 LED is out and the Red LEDs on TOR Outputs 1-4 and Outputs 1-2 are NOT ON - Call Enerdrive.
F8	If there are no Red LEDs turned on - call Enerdrive.
F9	**A:** Check that the EN3TOR-G2 sensor lead is connected to the Temp Port on the Enerdrive AC Charger and connected to one of the TOR Ports on the Advanced Relay Driver. **B:** Check that the EN3TOR-G2 sensor lead is connected to the Temp Port on the Enerdrive DC2DC Charger/s and connected to one of the TOR ports on the Advanced Relay Driver. **C:** Check that the SR-TS-TOR-G2 sensor lead is connected to the Temp Port on the TriStar Controller and connected to a TOR Port on the Advanced Relay Driver. **D:** Check that there is a twin core cable between the Combi Trigger 1 INPUT & COM contact and into the NO/COM contact on OUTPUT 1 or 2 on the Advanced Relay Driver.
F10	If Input 3 LED does not turn on - call Enerdrive.
F11	If fault codes are still active, you may still be within the 10 minute "Stop Charge" program. Wait a further 10 minutes and if the fault codes don't disappear - call Enerdrive.
F12	If any of the charge sources are still in fault code, check sensor cable from Advanced Relay Driver to charge source. If connected correctly and fault is still active - call Enerdrive.