

How-To: Charging Batteries for the X-Copter

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Info: This little tutorial describes how to charge our batteries for the X-Copter-Project

	Identifier:	Information:
Hardware:	Battery1 (LiPo_01)	Name: FlightPower Hacker evo 20 4900mAh 6S1P Charging: continuous: 20C, burst: 50C, charging: 1C Stored in: Speicher[31] as LiPo_01
	Battery2 (LiPo_02)	Name: XTRON 40C 5000mAh 6S1P Charging: continuous: 40C, burst: 80C, charging: 4C Stored in: Speicher[20] as LiPo_02
	Battery3 (NiCd_01)	Charging: loading current: 110mAh Stored in: Speicher[19] as NiCa_01
	Charging Station:	Ultra Duo Plus 60

We saved three configurations in the Ultra Duo for our batteries named: Lipo_01, Lipo_02 and NiCd_01

Battery Overview		LiPo_01	LiPo_02	NiCd_01
Cell-Count:		6	6	4
Nominal	Cell-Voltage	3.7V	3.7V	
	Total-Voltage	22.2V	22.2V	
Max.	Cell-Voltage	4.2V	4.2V	
	Total-Voltage	25V	25V	
Min.	Cell-Voltage	3V	3V	
	Total-Voltage	18V	18V	
Max. Charge Current		4.9 A (1C)	20 A(4C)	

Hint: The maximum charge power is not above 80 W.

Important: Warnings and security information are found in the documentation-pdf:
6478_ULTRA DUO PLUS 60_de.pdf

You should read that before using the charging station as the information therein will not be in this tutorial.

Charging Batteries:

Current charged per charging session = current * charging time

Refer to the datasheet of your batteries for information about max. current for charging.

Standard-charging-current is 1/10 of the capacity (1.7Ah capacity -> 170mA standard-charging-current)

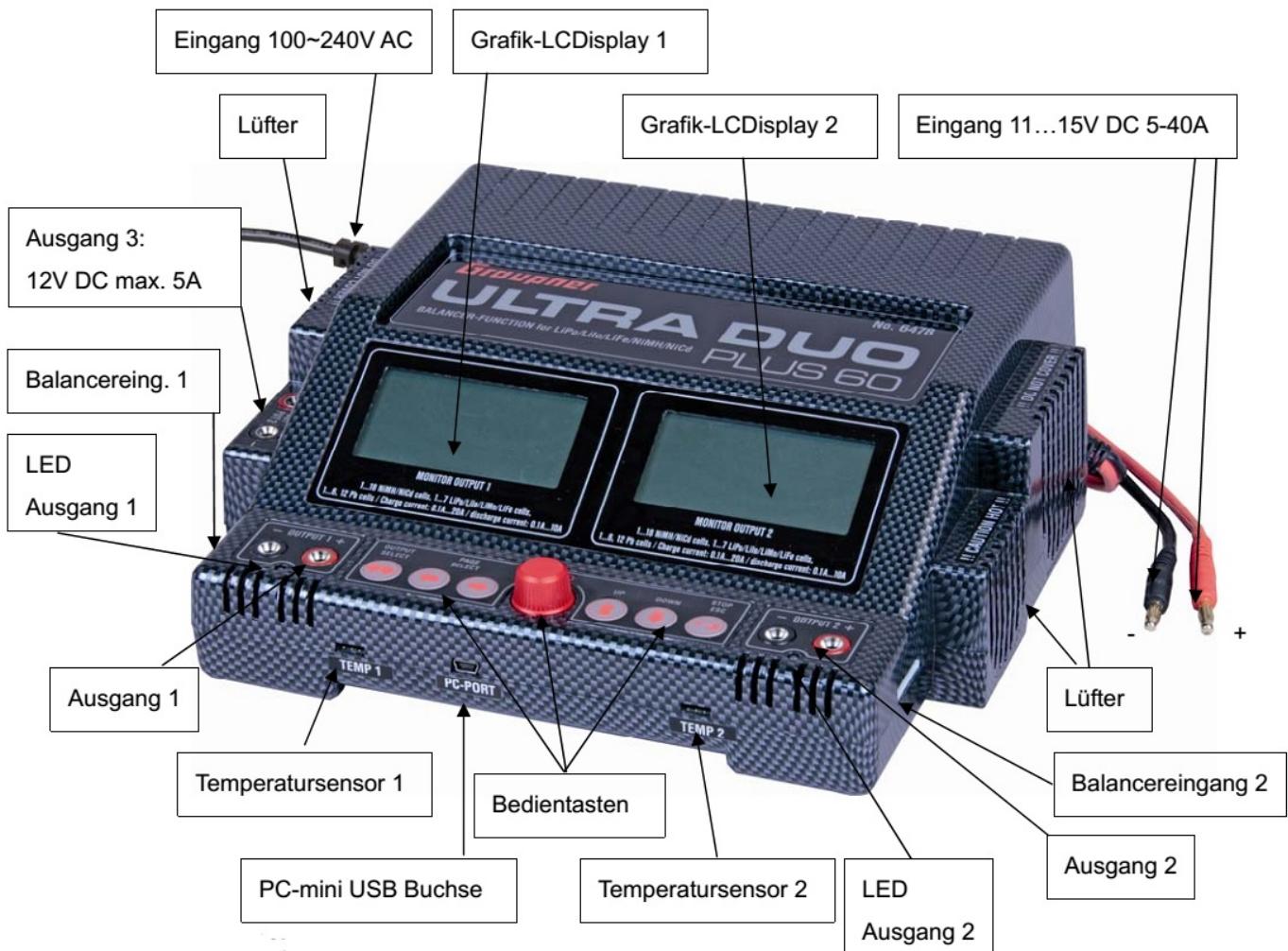
1. Plug power cable to start charging device
2. Connect charging cables to charging station (red = plus, black = minus)
3. Recommend for LiPo's: Connect cell adapter to "Balance" board and "Balance" board to charging station
4. We will use the CC/CV charging-mode for our batteries as fast-charging not supported by every type

Step-by-Step-Solution

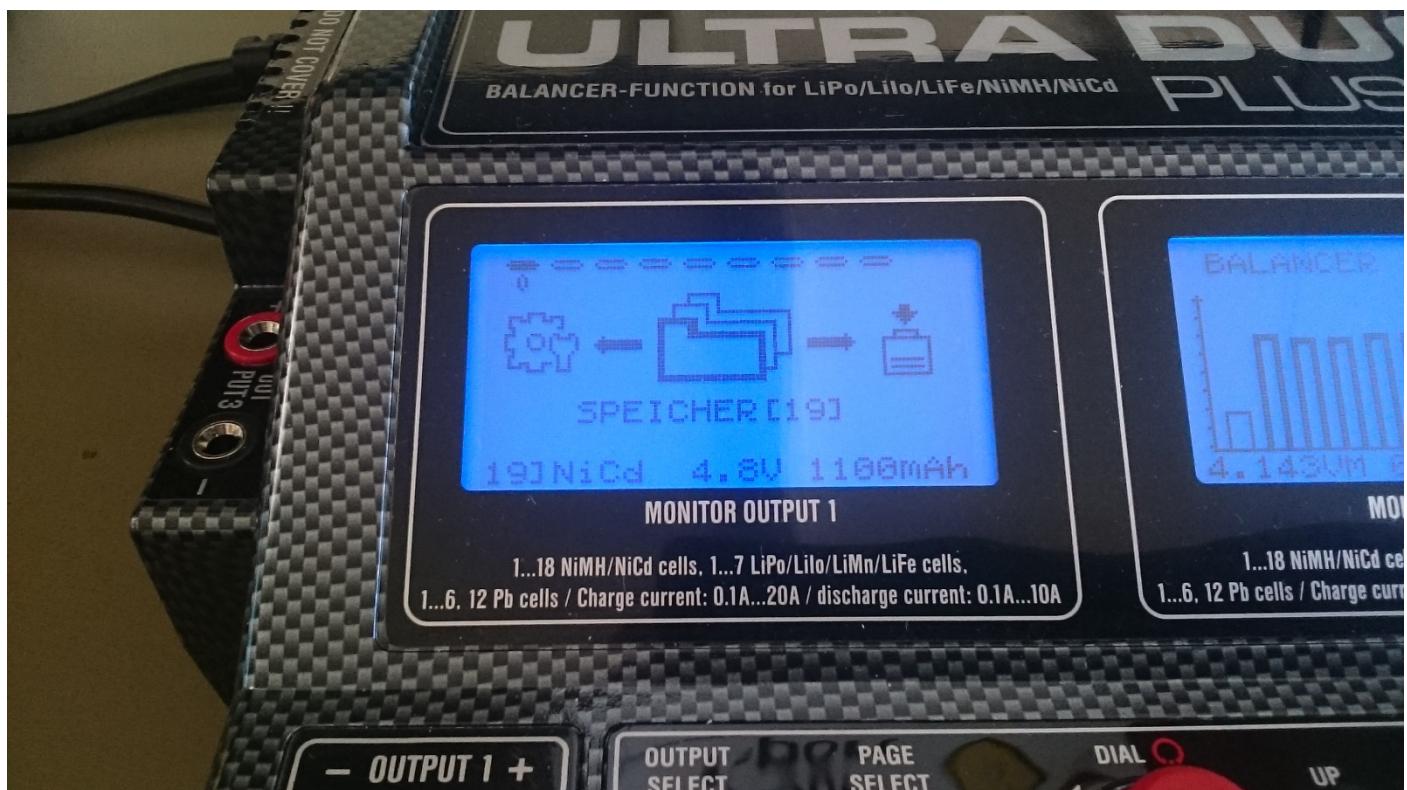
Overview



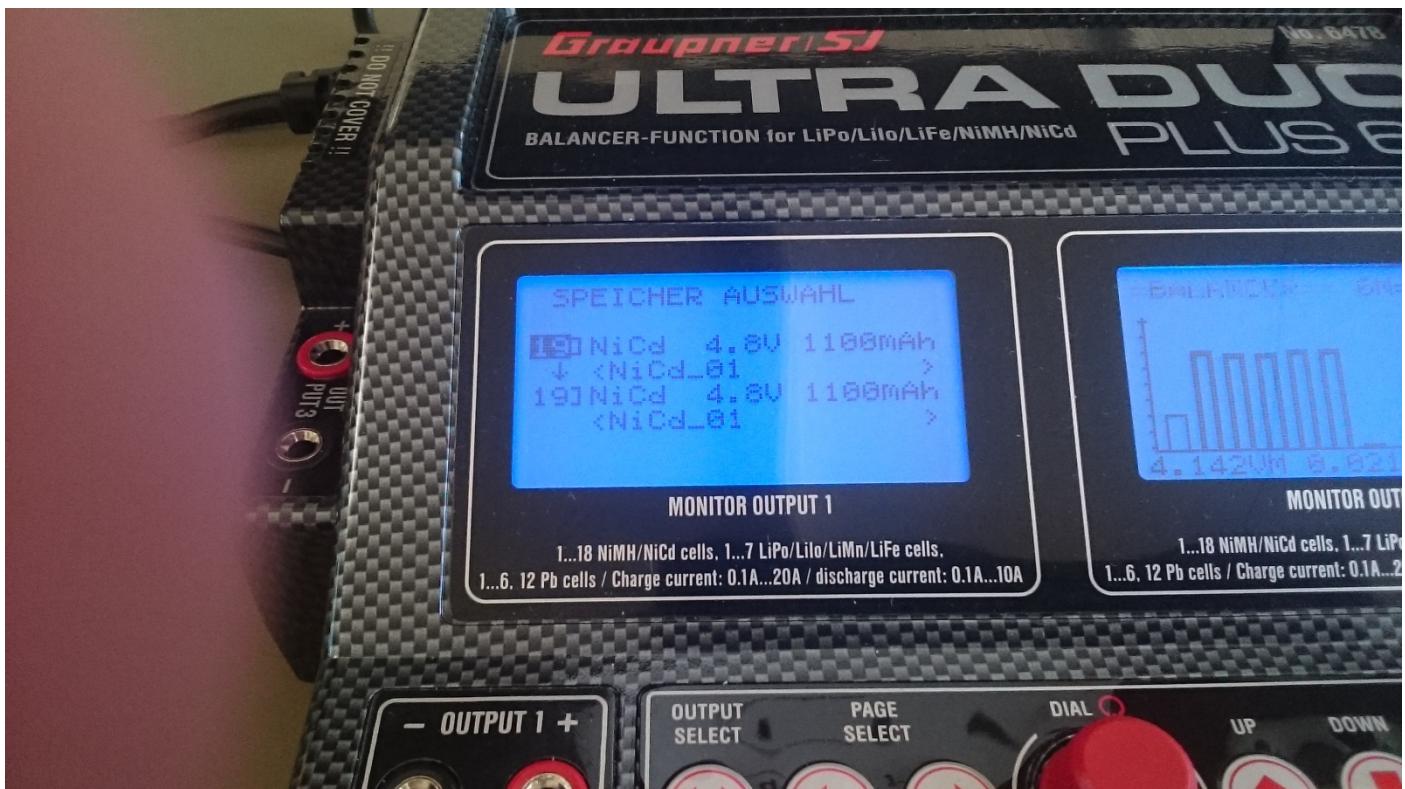
Control Interface



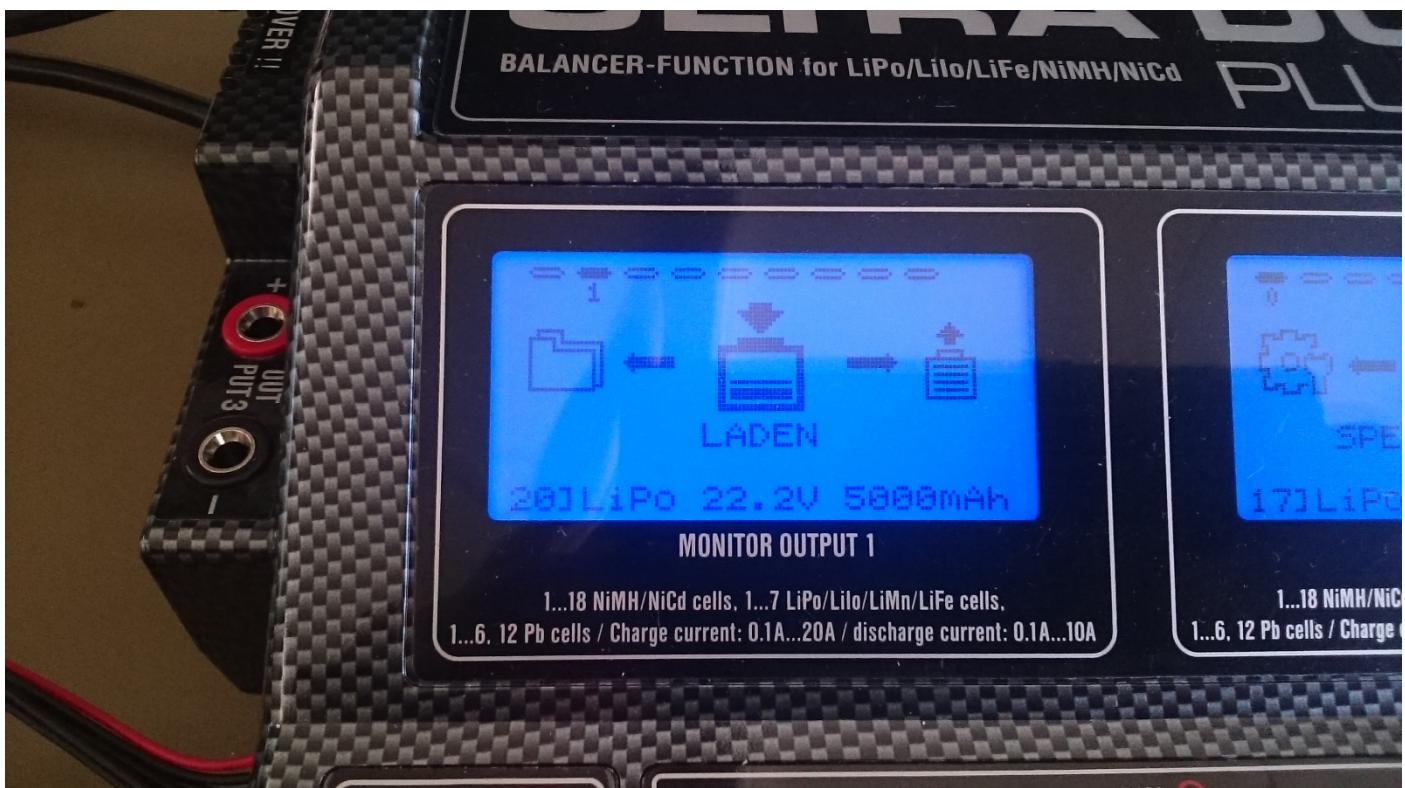
Enter "SPEICHER"-item: turn red click wheel (RCW) to select "SPEICHER" and push RCW



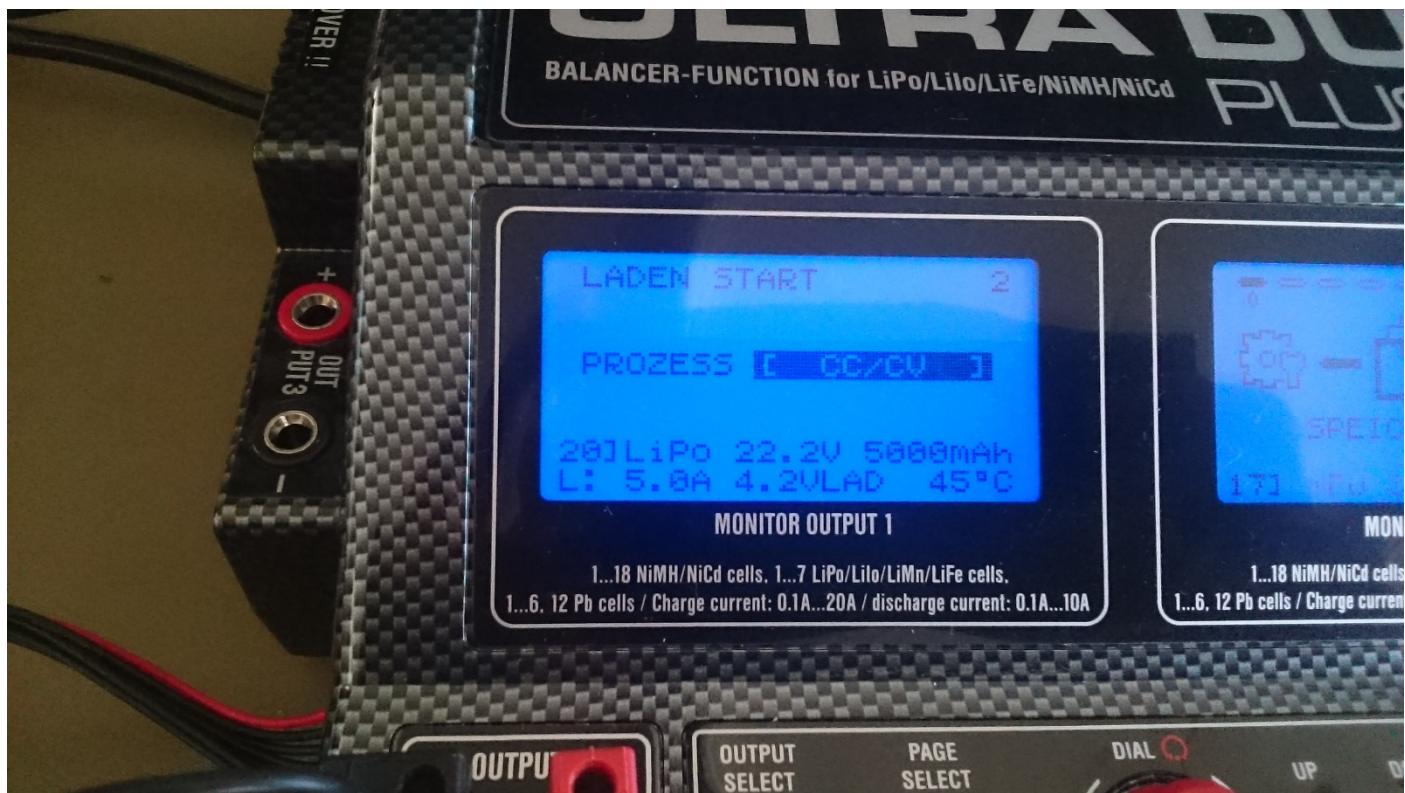
Choose save state with wheel and push STOP/ESC button to confirm (Hint: don't push RCW! With pushing RCW you overwrite save states!)



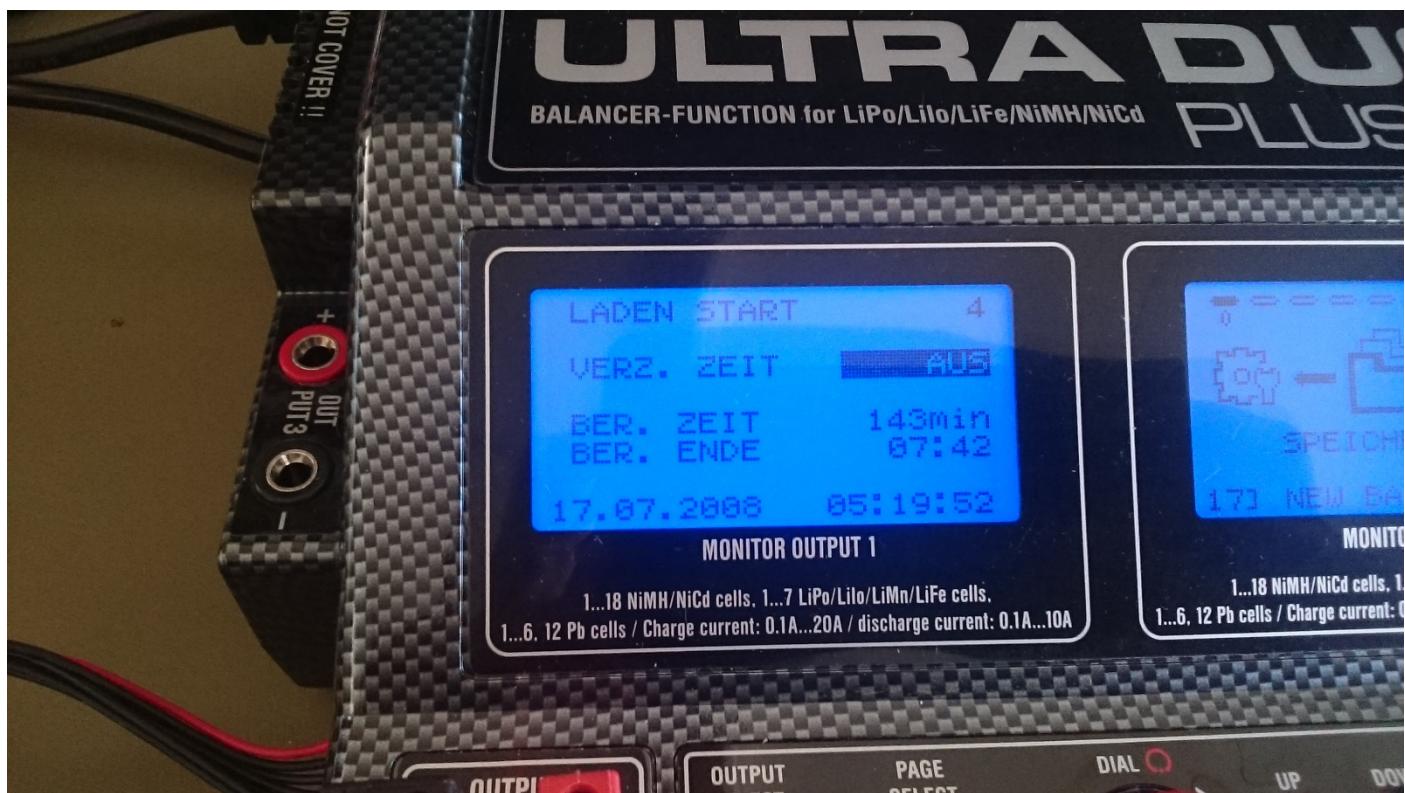
Choose Function: "LADEN" or "ENTLADEN" with RCW (here you can see the charging mode)



Use the CC/CV mode in the next screen (CC/CV is the common charging mode)



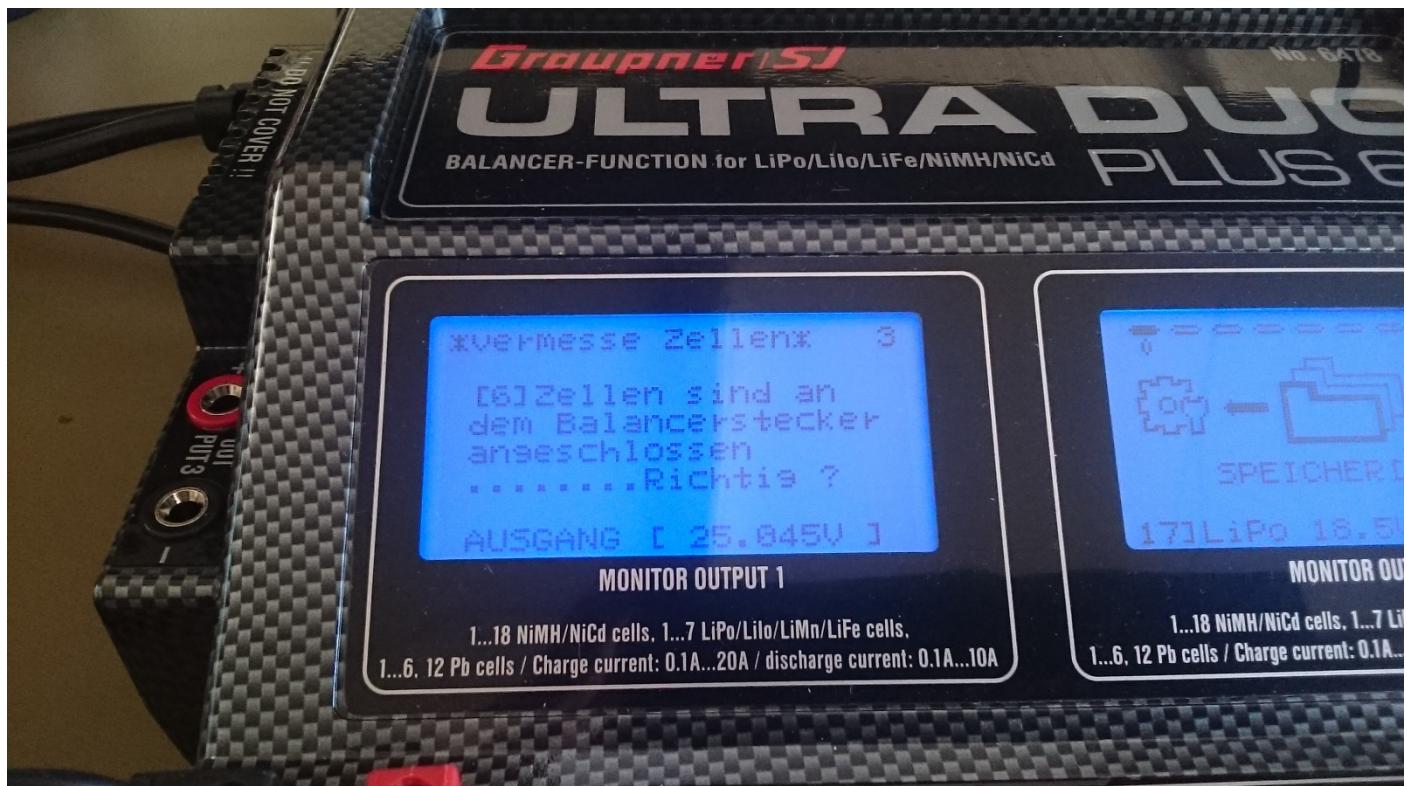
Set delay time to (VERZ. ZEIT) "AUS" (off)



Wait until connection is checked



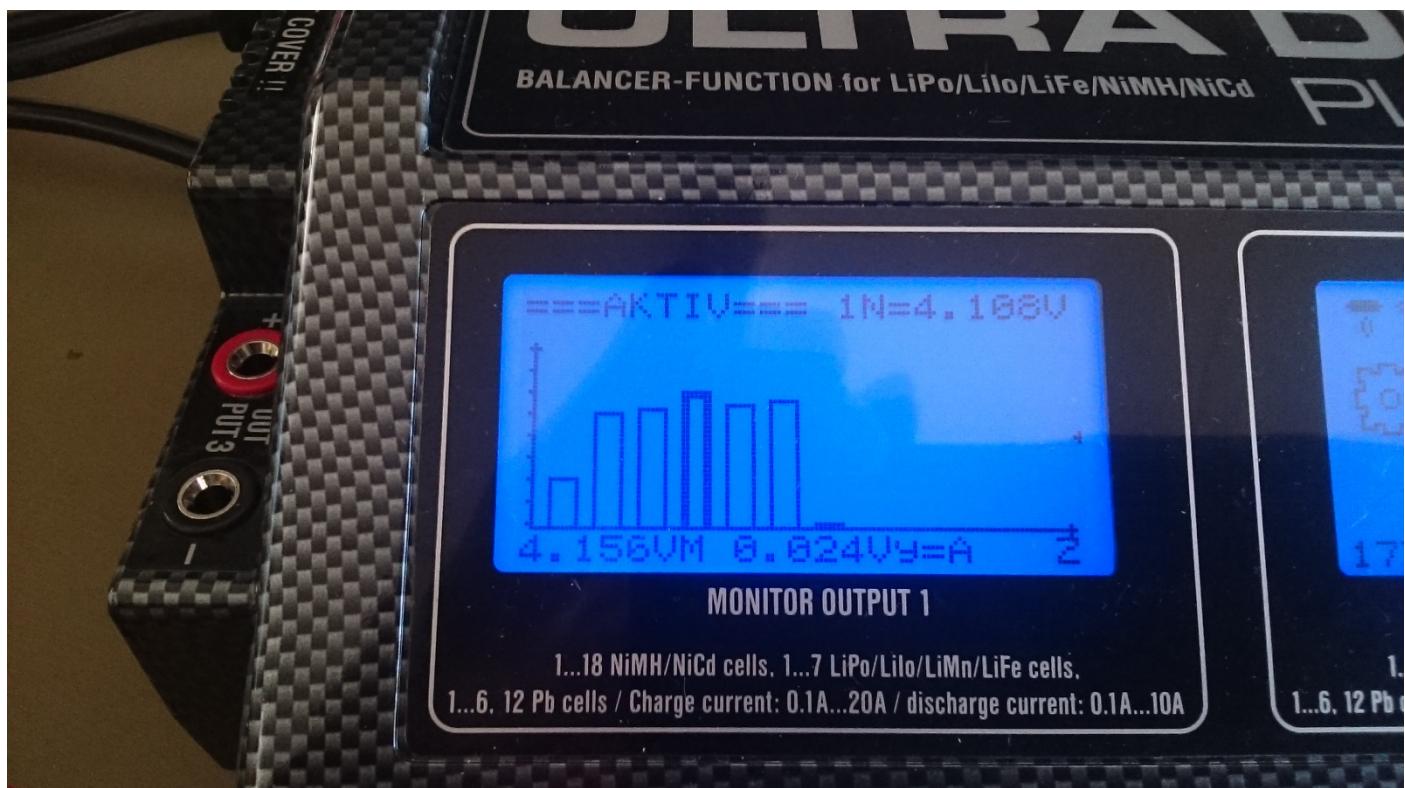
If Balance Board is connected: check cell count and confirm



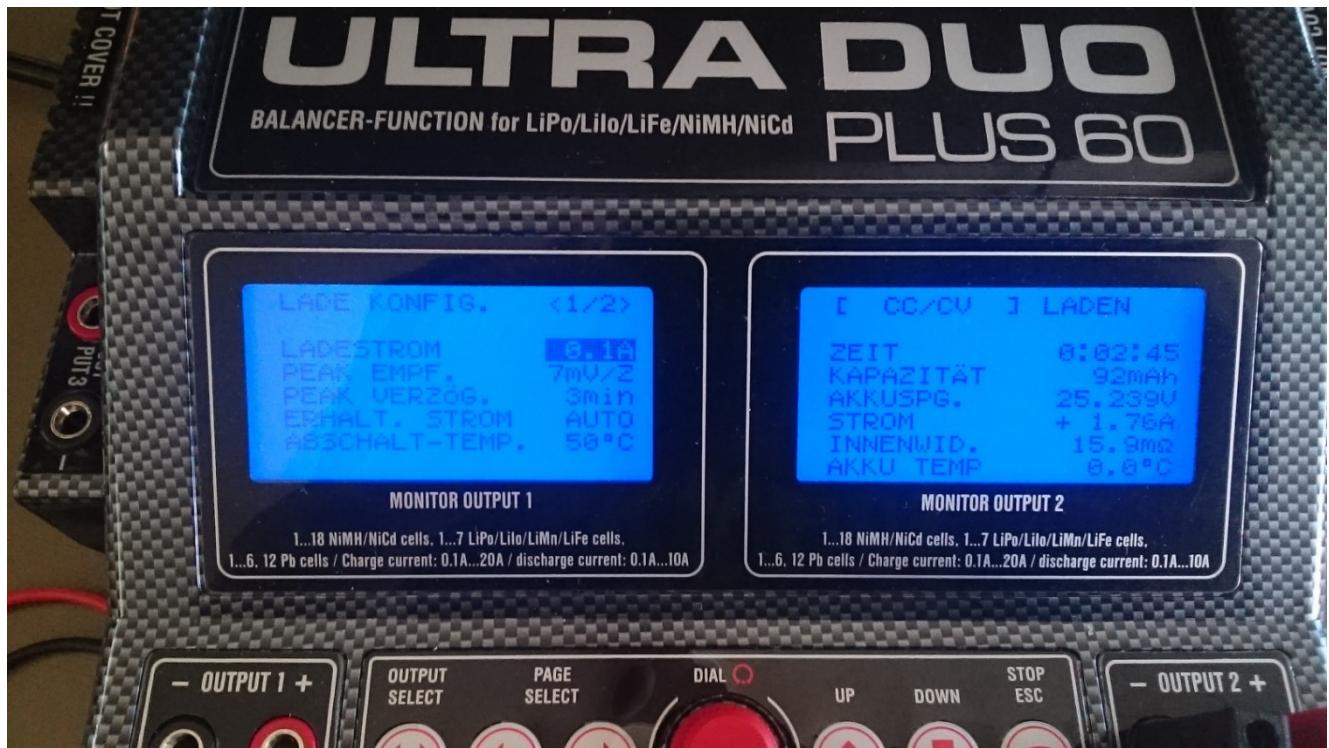
The power station starts charging and shows you current values



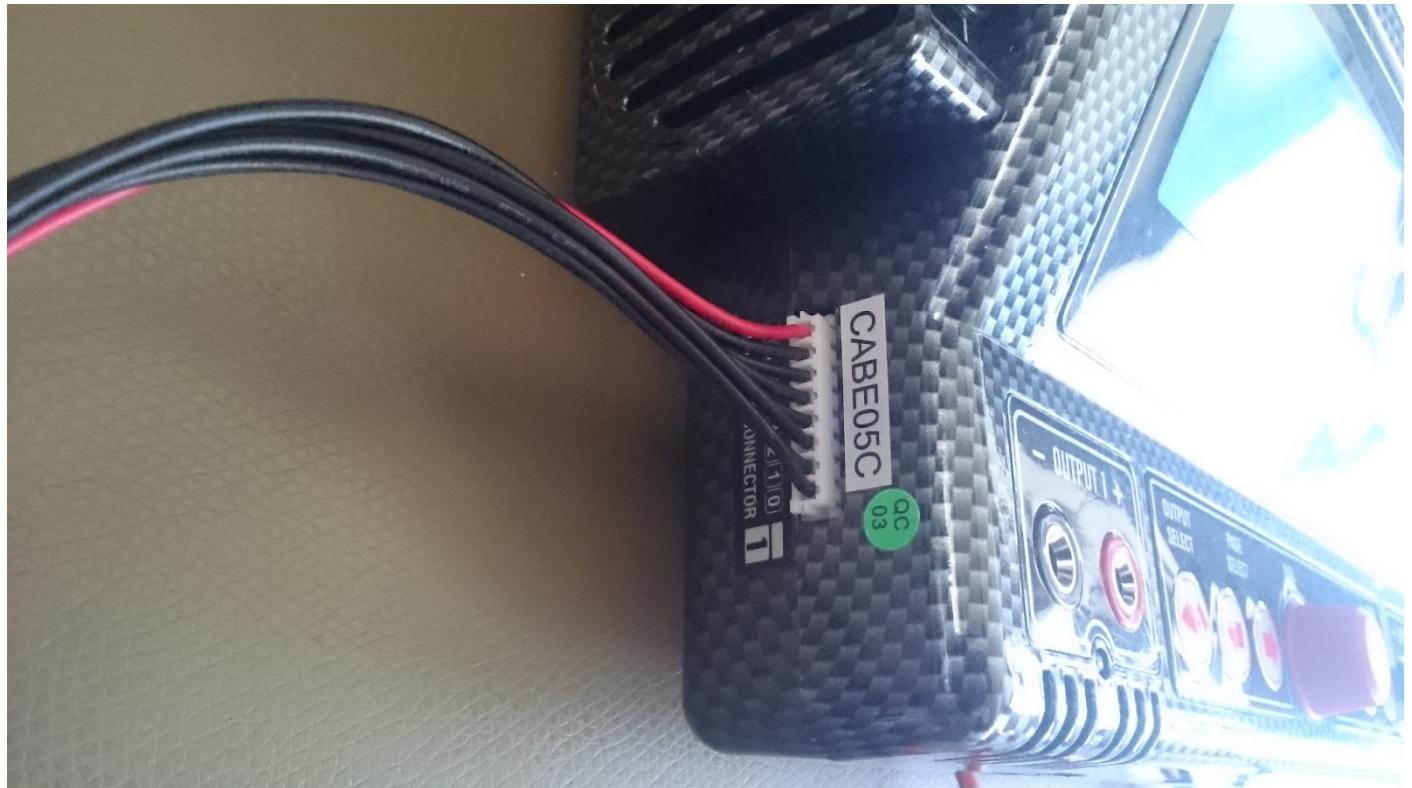
Turn the RCW to see more information



To configure the charge options press and hold RCW on "LADEN"-item until you enter der "LADE KONFIG." settings



BALANCE BOARD: plug the balance board into the connector on left for channel 1 or right side for channel 2



Plug the cell cable from battery to the 7S adapter – use the plug with the right count of cells

