

# PowerCube Quick Reference

## Switch ON Charger - Default Page

Connect charger to source 12V battery. Default page will show up. Using **←→** LEFT/RIGHT arrows you can place CURSOR under parameter which you want to change. When cursor is under requested parameter you can change it using **↑↓** UP/DOWN arrows.

You can have 0-9 SETs (any combination of saved parameters). If you want to apply your changes you must SAVE it. Set 0 is special one. You can change any parameter and start action without saving it before.

There are programs which reflect different technologies. NiCd, NiMH1, NiMH2, LiXxx and Pb. Each of this program has MAN (Manual) mode. AUTO (Automatic) mode is available only for NiCd, NiMH1 and NiMH2.

You can switch ON/OFF illumination of display

Here you see cursor. When cursor is on the left edge of display you can change pages from 0 to 4 using

<u>S</u> ET: 1 LiXxx	ILL	V
CYCL:1 C	D	Ah

Placing cursor under C (Charging) and pressing button START/STOP will start charging. You can always STOP charging with START/STOP button.

You can cycle your accu as many as 9 times. Cycle starts always with discharge followed by charge. There is minimum pause between every cycle 1:00 minutes. Can be up to 60:00 minutes.

Placing cursor under D (Discharging) and pressing button START/STOP will start discharging. You can always STOP discharging with START/STOP button

## Select page

You can change pages using **←→** only if cursor is close to the left edge of display

**History Page**

NiCd	5.9A	46.90	V
C	17:30	1.84	Ah

**Last result**

**Default Page**

<u>S</u> ET: 1 LiXxx	ILL	V
CYCL:1 C	D	Ah

**Default page after connecting 12V source**

**C Page**

AUTO	10.0A	12.3	V
C	120:00	3.00	Ah

**C-Charging setup**

**D Page**

MAN.	10.0A	12.3	V
D	0.5A	SAVE	Ah

**D-Discharging setup**

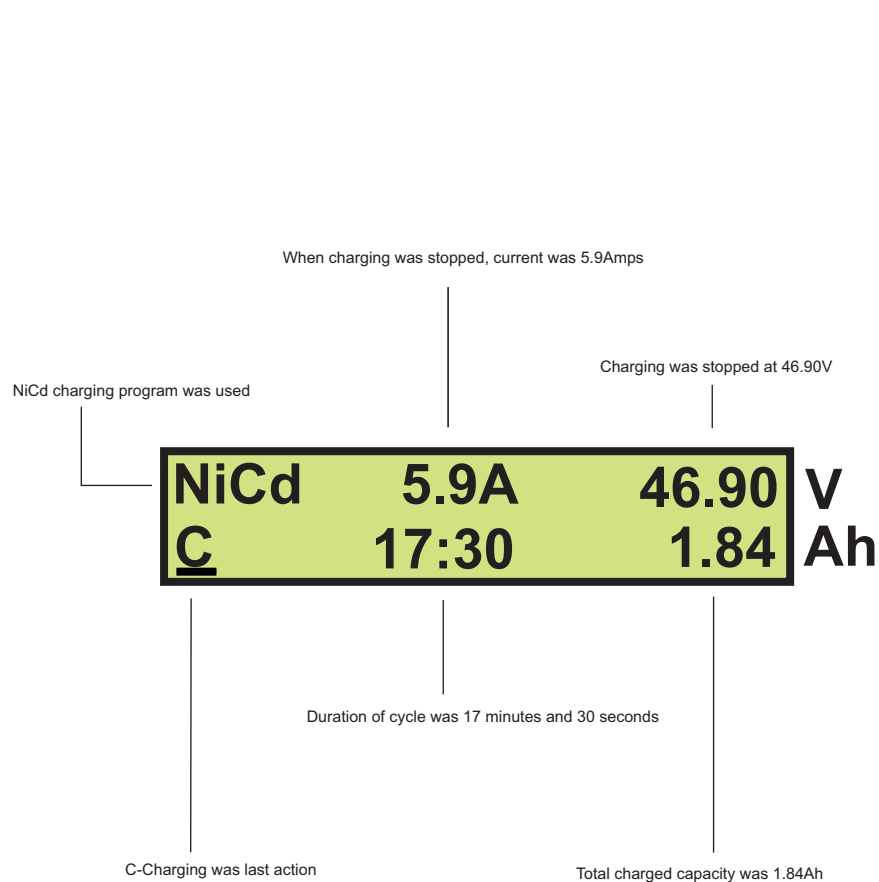
**Option Page**

SRC CAR	50Ah	V
PAUSE 1:00	SAVE	Ah

**Option setup**

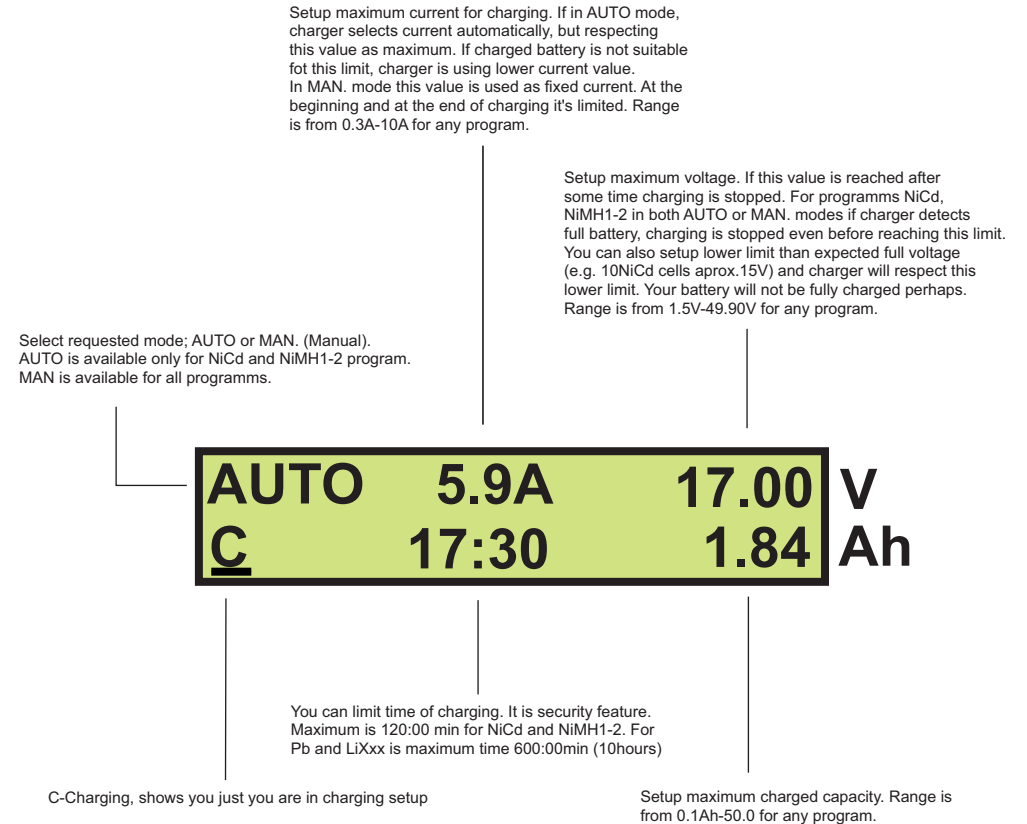
## History Page

This page shows result of last charging or discharging cycle. It stays in memory until you start another charging or discharging action using button START/STOP, doesn't matter if PowerCube is ON or OFF i.e. connected to 12V source.



## C Page (Charging setup)

This page allows you to setup all parameters necessary for secure, correct and fast charging of your battery. Don't forget to select appropriate program on Default Page; NiCd, NiMH1, NiMH2, LiXxx or Pb depending on type of battery you are going to charge.



**Warning! This is charger for experienced users and it is expected you know how to setup all limits for charged battery. Always carefully check all parameters before starting any program! Especially in MAN. (Manual) programmes Pb (LeadAcid) and LiXxx (Lithium based) there are no "hidden" tools how to indicate fully charged battery only limits you defined. You are fully responsible!**

## D Page (Discharging setup and save configuration)

This page allows you to setup all parameters necessary for secure, correct and fast discharging of your battery. Don't forget to select appropriate program on Default Page; NiCd, NiMH1, NiMH2, LiXxx or Pb depending on type of battery you are going to discharge. Be aware all energy from discharged battery is always retransferred to source 12V battery. Never connect PowerCube in discharging mode to 220V/12V DC source!

Setup maximum current for discharging. If in AUTO mode, charger selects current automatically, but respecting this value as maximum. If discharged battery is not suitable for this limit, charger is using lower current value. In MAN. mode this value is used as fixed current. At the beginning and at the end of charging it's limited. Discharging current is also depending if your SRC (Source) 12V battery is able to accept such current (see Page 4 Option setup). Range is from 0.3A-10A for any program.

Setup minimum voltage. If this value is reached after some time charging is stopped. For program NiCd, NiMH1-2 in both AUTO or MAN. modes if charger detects empty battery, charging is stopped even before reaching this limit. You can also setup higher limit than expected empty voltage (e.g. 10NiCd cells approx.10V) and charger will respect this higher limit. Your battery will not be fully discharged perhaps. Range is from 1.0V-49.00V for any program.

Select requested mode; AUTO or MAN. (Manual). AUTO is available only for NiCd and NiMH1-2 program. MAN is available for all programmes.

<b>MAN.</b>	<b>10.0A</b>	<b>7.30</b>	<b>V</b>
<b><u>D</u></b>	<b>0.5A</b>	<b>SAVE</b>	<b>Ah</b>

Limit the lowest discharging current. If discharging current drops below this limit, discharging is terminated. Range is from 0.2A-10.0A for any program.

D-Discharging, shows you just you are in discharging setup

Select with cursor and press SAVE button. All parameters on Page C and D are saved in corresponding SET. There are as many as 10 SETs. SET is selected on default page 1. SET 0 has special purpose, it can't be saved. Whatever you setup in 1-9 SETs, until it is NOT saved previous values are used for any action (C or D)!

You can always send last full cycle to PC if UP arrow is pressed when cursor on SAVE. There is no need to have PC connected to PowerCube permanently. Last cycle is stored until you will start new one.

## Option Page

This page allows you to setup optional parameters as if PowerCube is connected to SRC(Source) 12V ordinary CAR battery or DEEP cycle battery, capacity of this battery and PAUSE between cycles D/C (Discharging/Charging).

This parameter is important to allow full discharge power of your PowerCube and simultaneously protect your 12V source battery from overcharging. You can select CAR or DEEP cycle battery. If CAR is selected, voltage on source 12V battery is limited to 14.0V and charging current (current which is retransferred during discharging your packs) to 0.1 capacity (see Setup capacity of source battery); If DEEP is selected, voltage on source 12V battery is limited to 13.8V and charging current (current which is retransferred during discharging your packs) to 0.2 of capacity (see Setup capacity).

Setup capacity of your SRC (Source) battery. This allows charger to limit current during energy retransfer. This will protect your source 12V battery from overcharging.

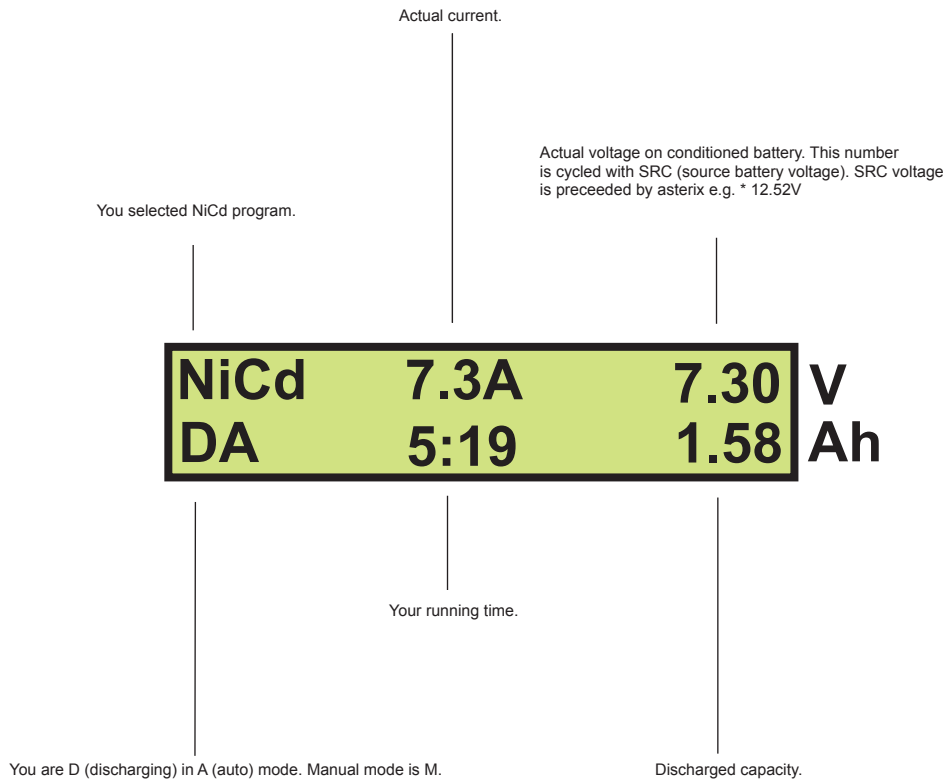
<b>SRC</b>	<b>CAR</b>	<b>70Ah</b>	<b>V</b>
<b>PAUSE</b>	<b>1:00</b>	<b>SAVE</b>	<b>Ah</b>

Pause time between D/C (Discharge/Charge) cycles. Range is from 1:00-60:00 minutes.

After setup you can SAVE all parameters on this page.

## Monitor Page-Start charging or discharging

After you carefully setup all necessary parameters for your battery we can start requested action. All parameters you can setup with connected battery. Until you press button START/STOP nothing is done. After you pressed START/STOP button you will see following display. You can always interrupt any action with another button START/STOP press.



## After charging or discharging is finished

End of requested action is announced by short beeps. Also if there is any error and action can't be performed you will here short beeps and short description of error is displayed.



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