

AccuPower AccuManager 605P



Operation Manual

Thank you for purchasing AccuManager605P. This is a rapid charger for Industrial, professional and hobby use with build-in balancer, computerised with microprocessor and specialized operating software, Please read this entire operating manual carefully before using.

Features

- Built-in voltage balancer for lithium batteries, there is no external balancer needed when charging Lilon / LiPo batteries.
- Delta-peak sensitivity - The automatic charge termination program works on the principle of the Delta-peak voltage detection.
- Adjustable Capacity load limit: The charging capacity always calculated by multiple of the charging current and time. If the charging capacity exceeds the limit the process will be terminated automatically when you set the maximum value.
- Temperature limit: The temperature of the battery on charging will raise by its internal chemical reaction. You are able to select a maximum temperature which the cell is allowed to reach during charging. (only available if sensor is connected)
- Processing time limit: You can also restrain the maximum process time to prevent from any possible defect.
- Input power monitor: To protect the car battery using as input power from being damaged the voltage of it always monitored. If it drops below the lower limit the process will be ended automatically.

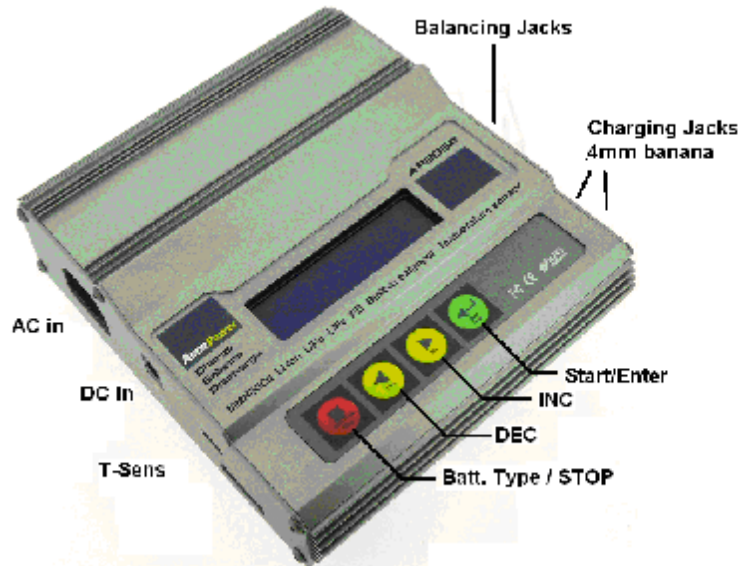
High power and high performance circuit

AP605P employs a circuit that has a maximum output power of 50W. As a result it can charge up to 15 cells of NiCd / NiMH and 6series of LiPo batteries with maximum current of 5.0 A.

Specifications

- Operating voltage range: 10.0 – 18.0V DC or 230V 50Hz AC
- Circuit power: max. 50W
- Charge current range: 0.1 - 5A
- Current drain for balancing LiPo: 300mAh/cell
- NiCd / NiMH battery cell count: 1~15 cell
- Li-Ion / Polymer cell count:1~6 Series
- Pb battery voltage; 2 to 20V
- Weight: 580g
- Dimensions: 140X130X45 mm

Exterior of the unit



Connect batteries to the unit

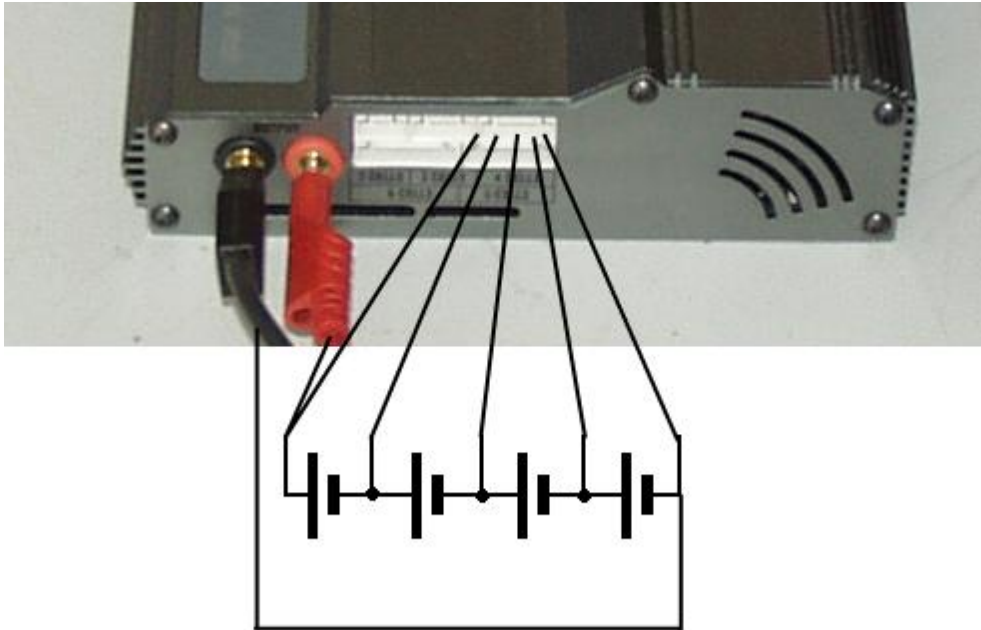
WARNING:

Although AP605P comes with build-in reverse polarity detection, it might harm your cells or charger if wiring is incorrect. Please check wiring and parameters before usage.

Within the scope of supply you can find various connection leads to connect your battery to AP605P.

Connect Lilon batteries to the unit

When charging Lilon or LiPo batteries, it is recommended to use the balance charging mode, this is how to connect your batteries using the balance plugs:



The negative connector is the most right at all 4 balancing plugs at the charger.

Using the AP605P

The device provides an easy-to-use LCD interface, Buttons are used for:

Batt. Type / Stop:

Go to next function group in main menu / discard charge process when its running.

Dec:

Go to previous function group in main menu / decrement selected value in submenus.

Inc:

Increment selected value in submenus

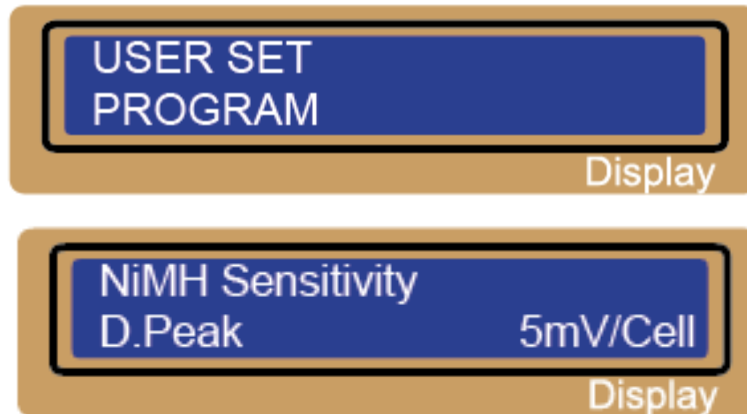
Start / Enter:

Enter function group / Confirm current value
Press long to start charging process

The program menu

Here you are able to set basic options.

On the first screen, press ENTER to join this menu, use DEC and INC to switch between the program options. Press ENTER to make Values selected and DEC / INC to change them.



- NiMH Sensitivity

AP605P uses delta peak detection. For experienced users the option menu offers an adjustable Trigger Voltage. It is possible to vary this parameter in 1mV steps between 5-20mV. There is a menu option for NiMH and NiCD separately.



- V.Type

AP605P supports Lilon, LiPo and LiFe chemistry for charging lithium batteries. Please select the one you want to charge BEFORE using!



- TEMP CUT OFF

An optional feature using temperature probe contacting the surface of battery, the temperature cut-off can be on or off. If it is on, set the maximum temperature at which the charger should allow battery to reach during charge. Once a battery reaches this temperature during charge, the process will be terminated to protect the battery



- SAFETY TIMER

When you start a charge process, the integral safety timer automatically starts running at the same time. This is programmed to prevent overcharge the battery if it proves to be faulty, or if the termination circuit cannot detect the battery full. The value for the safety timer should be generous enough to allow a full charge of the battery.

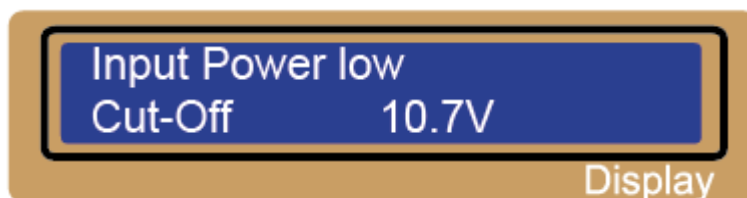


- CAPACITY CUT OFF

This option sets the maximum charge capacity that will be supplied to the battery during charge. If the delta-peak voltage is not detected nor the safety timer expired by any reason, this feature will automatically stop the process at the selected capacity value.

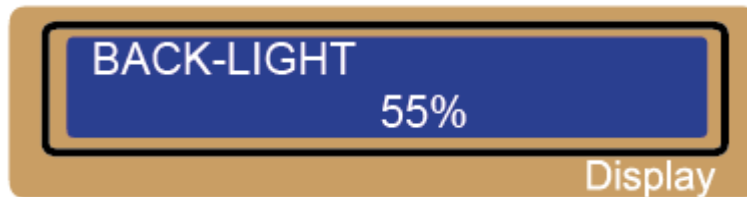


The beep sounds at every time pressing the buttons to confirm your action. The beep or melody sounded at various times during Operation to alert different mode changes. These audible sounds can be on or off.



- Input Power low

This program monitors the voltage of input battery. If the voltage drops below the value you set the operation forcibly terminated to protect the input battery.



- BACKLIGHT

You can adjust the brightness of LCD screen from 0-100% at the charger.



- Waste Time

When using the Cyclic Charge Function for NiXX batteries, between charge and discharge cycle there will be a break. This option gives you the ability to change the duration of this break.

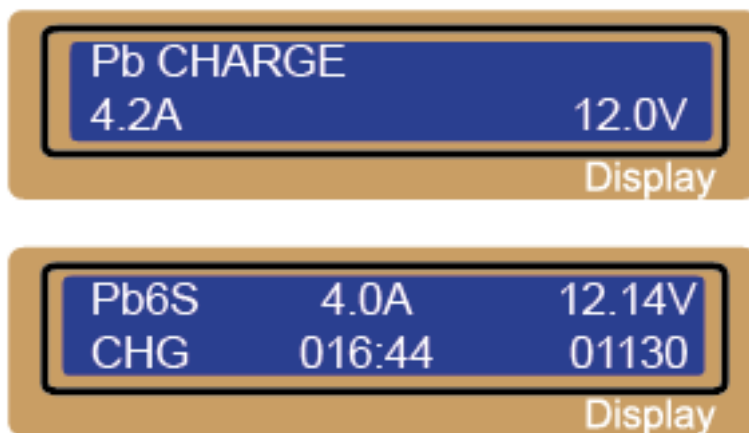
Charging lead acid batteries

Navigate to option „Pb BATT“ by using STOP / DEC buttons and confirm by pressing „ENTER“. You now have to choose if you either want to use charge or discharge function. Select the desired option by using the INC / DEC Buttons and confirm with ENTER again.

Now you are prompt to select the desired load current, it will be adjusted automatically by the chargers microprocessor to protect the batterys chemistry.

When you setted up all parameters the charge process will be started by press and hold the START button for 2 seconds.





After finishing charge process you will be informed about final voltage, charge current, charge duration and charged capacity on the display. This message will be confirmed by pressing STOP.

Charging NIMH/NiCD batteries

Please note that the menu structures for NiCD and NIMH charging are similar. This representation is for NIMH, but mind to select the right battery type!



Navigate to option „NiMH BATT“ by using STOP / DEC buttons and confirm by pressing „ENTER“. You now have to choose if you either want to use charge, discharge or cyclic charge function. Select the desired option by using the INC / DEC Buttons and confirm with ENTER again.

Now you are prompt to select the desired load current - It will be adjusted automatically by the charger's microprocessor to protect the battery's chemistry. When you entered all parameters the charge process will be started by press and hold the START button for 2 seconds. If you want to use cyclic charging you have to enter the charge and discharge currents in CHG and DSC window previously.



After finishing charge process you will be informed about final voltage, charge current, charge duration and charged capacity on the display. This message will be confirmed by pressing STOP.

Charging LiPo/LiFe/Lilo batteries

There are three different chemistry types of lithium batteries.

AccuManager605P is designed for charging Lilon, LiPo and LiFe batteries up to 6 cells. (LiXX stands for the selected one)

To avouch that the microprocessor uses the suitable parameters for the connected battery you have to confide the used battery type is the selected one in the options menu. (see "V.Type" on page 5)



Navigate to option „LiXX BATT“ by using STOP / DEC buttons and confirm by pressing „ENTER“. You now are in the charge menu for LiXX batteries.



- Lilon CHARGE

Similar to all the other battery types you first have to select the max. charge current. AP605P is able to detect the number of cells automatically and gives you the ability to choose the cell count by hand. If you use auto-detection please verify recognized

cell count. You will have to confirm the identified number after triggering the charge process (press START 2 seconds) by using START button again.



- Lilon BALANCE (every cell voltage will be monitored to be even)

This method is most recommended for charging lithium batteries. AP605P will measure and adjust each cell voltage to be equal. This leads on to better performance and more persistence. Balanced charging is only available for battery packs with conducted balancing plug. (see "connect Lilon batteries " on page 3/4)



- Lilon DISCHARGE

AP605P is able to discharge batteries with up to 5 A. Discharge current is adjustable in 100mA steps.



- Lilon FAST CHG

AP605P also offers a quick charge mode for Lilon batteries. Charging proceeds faster but the handicap is that the loaded capacity is a bit smaller than normal.



- Lilon STORAGE

This is charging or discharging lithium battery not to be used for the time being. AP605P will determine to charge or discharge the battery to the certain voltage depending on the voltage of the battery at its initial stage. This charge mode will guarantee best battery durability when its not in use for a while. Reactivate the battery with a simple charge process.

Error messages



REVERSED
POLARITY

Display

Please check Polarity of the connected battery.



CONNECTION
BREAK

Display

Please check cabling between charger and battery.



SHORT ERR

Display

Short circuit at the battery / cable, please check wires.



IN VOLTAGE ERR

Display

The Voltage of the Source has dropped below the threshold; please ensure that the source battery / power adaptor provides enough power.



VOL SELECT ERR

Display

There is a deviation between the selected cell count and the voltage of the battery.



BREAK DOWN

Display

Generic failure



BATTERY CHECK
LOW VOLTAGE

Display

The connected battery is deep discharged or the selected cell count is too high.



BATTERY CHECK
OVER VOLTAGE

Display

The connected battery is too much charged or the selected cell count is too small.

A blue rectangular display with a black border showing the text "CONTROL ERR".

CONTROL ERR

Display

Internal error, please reconnect all cables and try again.

A blue rectangular display with a black border showing the text "TEMP OVER ERR".

TEMP OVER ERR

Display

AP605P recognized that the temperature is too high; please place the charger on flat and heat-resistant surfaces only.

A blue rectangular display with a black border showing the text "BATT VOL ERR" and "CELL CONNECT" on two lines.

BATT VOL ERR
CELL CONNECT

Display

The connection of the balancing plug is corrupt.

A blue rectangular display with a black border showing the text "BATTERY VOLTAGE" and "CELL HIGH VOL" on two lines.

BATTERY VOLTAGE
CELL HIGH VOL

Display

One cell of your lithium battery pack has over voltage.

A blue rectangular display with a black border showing the text "BATTERY VOLTAGE" and "CELL LOW VOL" on two lines.

BATTERY VOLTAGE
CELL LOW VOL

Display

One cell of your lithium battery pack has under voltage.

Safety warnings

- Never leave the charger unsupervised when it is connected to its power supply. If any malfunction is observed immediately terminate the process and refer to the operation manual.
- Keep away the unit from dust, damp, rain, heat, direct sunshine and vibration. Do not drop it.
- The circuit of the unit is designed to be powered by a 12V DC only.
- This unit and the battery to charge or discharge should be set up on a head-resistant, non inflammable and non-conductive surface. Never place them on a car seat, carpet or similar. Keep all the inflammable volatile materials well away from operating area.
- Be sure to understand the information of the battery to be charged or discharged accurately. If the program is set up incorrectly the battery can severely be damaged. Especially Lithium battery can cause a fire or an explosion by over-charging.
- To avoid short-circuits between the charge lead, always connect the charge cable to the unit first and only then to the battery to be charged or discharged. Reverse the sequence when disconnecting.

- Do not connect more than one battery pack to the charge lead at any one time.

Warranty

We warrant this product for a period of one year (12 months) from the date of purchase. The guarantee applies only to such material or operational defects, which are present at the time of purchasing the product. During that period, we will repair or replace without service charge any product deemed defective due to those causes. You will be required to present proof of purchase (invoice or receipt). This warranty does not cover the damage due to wear, overloading, incompetent handling or using of incorrect accessories.

Notes:

