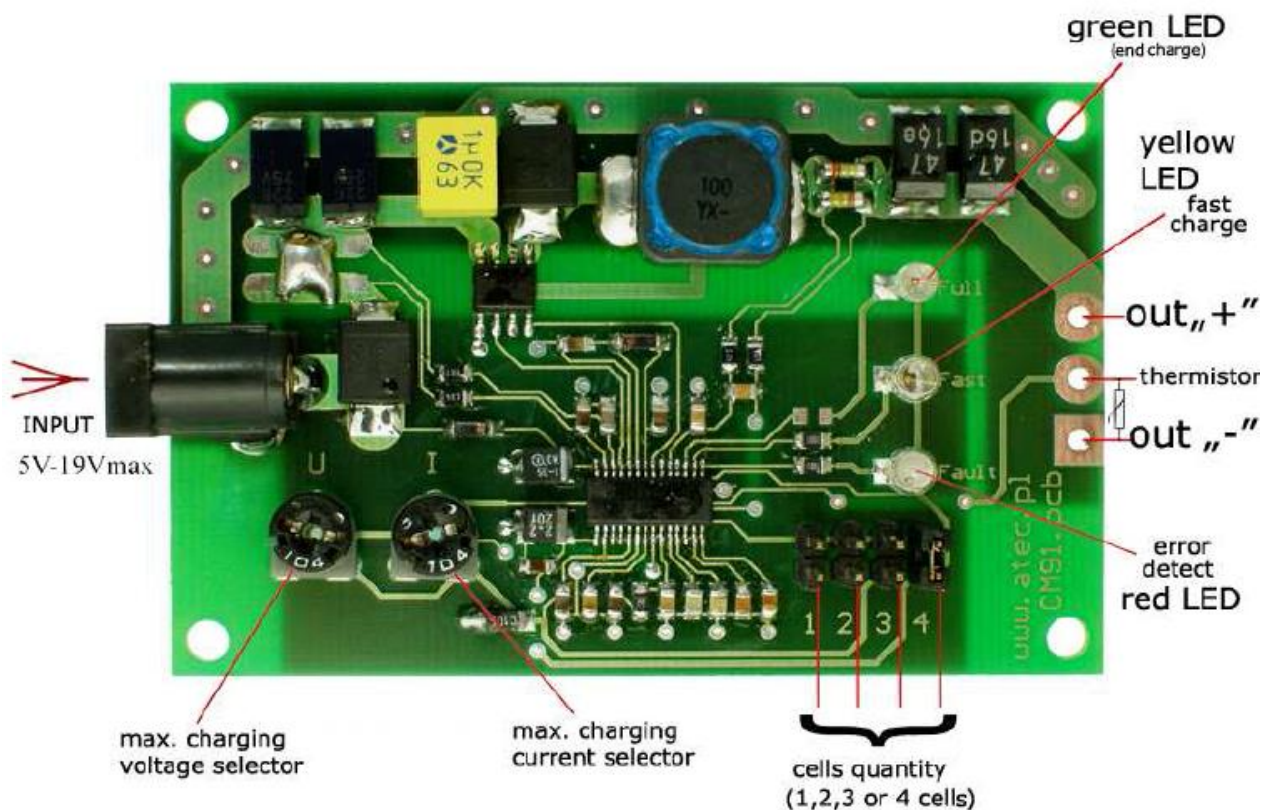


AUTOMATIC CHARGER FOR LI-ION BATTERIES



Lp.	Technical Specification	
1.	Cells	1 - 4
2.	Voltage range	3,7 (3,6V) - 14,8V (14,4V)
3.	Max. voltage range for single cell*	4,0V - 4,4V
4.	Charging current range	100mA - 3000mA
5.	Input voltage range **	6,0V - 20,0V
6.	Charging time control	YES
7.	Charging times***	1h – 80% 2,5h -100%

*adjustable

**adequate to cells quantity

***at 2000mA; cel: 18650 2200mAh

PRODUKT DESCRIPTION

A charger is based on microcontroller MAX1737. The charger has a protection against cells overheating. For a faultless working it is necessary to use a 10k Ω NTC thermistor connected between charger's negative out and "thermistor out" on the charger's board. The NTC have to be placed on the cell(s) surface. A charger is available as a mounted and started-up circuit board and as a version in sealed housing. So prepared charger is directly customized to customer's demands. This charger has been designed for BTO and is produced in Poland. For faultless charging process it is necessary to provide an adequate to number of cells power supply, with sufficient current output.

CHARGING PROCESS

Charging is a two stage process. At first stage (CC) a cell is charged with maximum current, which can be selected by a user within defined range. During this stage a yellow LED is lighting. After maximum voltage detecting (max. voltage is defined by a user), a charger turn into trickle charge mode (CV). In this stage a green LED is glowing. The end of charging process is signalized by green LED turn off. A red LED shows charging errors i.e. maximum temperature exceed, charging time exceed or other uncertain causes.

Safety rules for Li-Ion cells charging

1. It is not allowed to charge unprotected cells. It is necessary using PCB even for single cells. Not using PCB may cause explosion, fire, and serious danger in some circumstances.
2. During Li-Ion cells charging process end voltage is very important and strict parameter. It should be defined for a particular battery, according to a battery producer's data sheet.
3. Normally maximum charging current should not exceed 1C parameter. Before charging current adjusting it should be verified according to producer's suggestions.