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Specifications of NiCd/NiMH charger CHT3xx

The charger module is designed for fast charging a wide range of NiCd as well as NiMH battery packs. It incorporates intelligent multiple-gradient battery voltage monitoring and intelligent DC-DC converter for power management. The charger module supervises the battery conditions (voltage and temperature if used with the optional thermistor attached to the battery pack) and controls the applied charging current. With automatic top-off charging, the charger ensures that the fast charge is stopped, before the critical stage of overcharging is reached. It has two LED's for charge and temperature status.

This charger module is designed for DC operation.

Features

- Multiple voltage gradient monitoring (dV/dt and d^2V/dt^2)
- Charging is disabled at too low or too high temperatures
- Battery voltage measurement without charging current
- Top-off and trickle charge function
- Two LED outputs for charge status indication
- Disabling of d^2V/dt^2 switch-off criteria during battery formation
- Battery-voltage check to avoid fast charging of deep discharged or overcharged batteries
- Input voltage of charger can be above and below battery voltage

Detailed Specifications

The following table contains a summary of detailed specification of the charger design. The first column specifies the range this design can be adjusted for and the second column contains the specifications of the existing charger module.

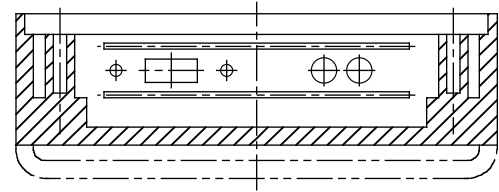
Specification	Adjustment range	CHT310 charger design
Number of cells	2-12	Switch between 4 and 10
Fast charging current (I_{fast})	0.25C .. 3 C recommended	About 800mA
Top off charge current (only if fast charge is terminated by d^2V/dt^2 criteria)	$1/4 I_{fast}$	$1/4 I_{fast}$
Trickle charge current	$1/256 I_{fast}$	$1/256 I_{fast}$
-delta V sensitivity	-12mV/cell	-12mV/cell
Charging temperature window	0°C – 40°C recommended any range possible	0°C – 40°C
Input voltage	9-28VDC	9-28VDC

LED behaviour

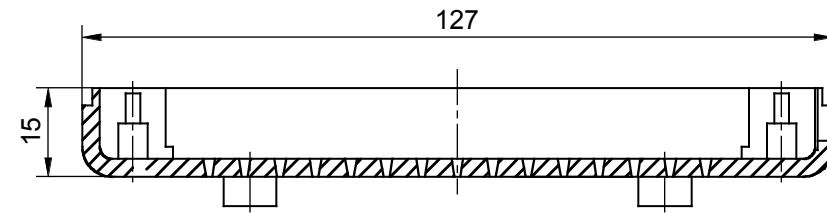
The following table summarizes the behaviour of the two LED under different operating conditions.

Operation mode	green LED	red LED
Battery fast charging	flashing	OFF
Fast charge finished or battery in trickle charge	ON	OFF
No battery connected	OFF	flashing
Temperature out of the window, NTC short or broken	OFF	ON
Battery voltage too high (overcharged)	OFF	flashing
Temperature out of the window before power on or battery insertion	flashing, but no current is flowing	OFF

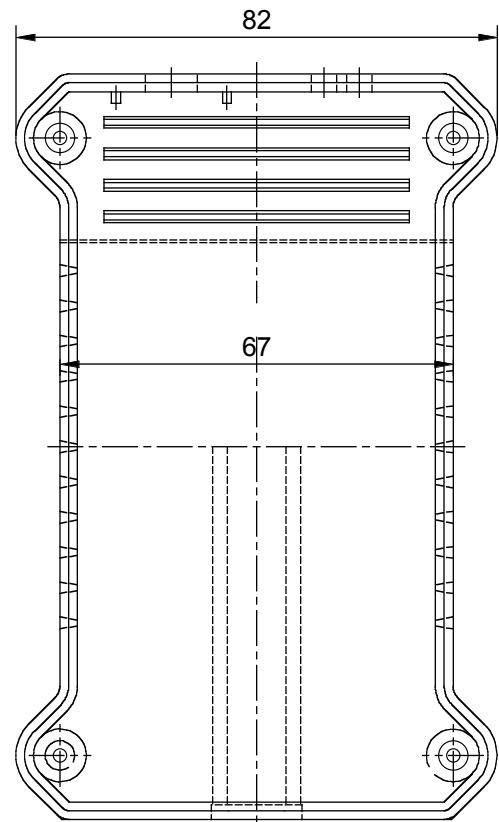
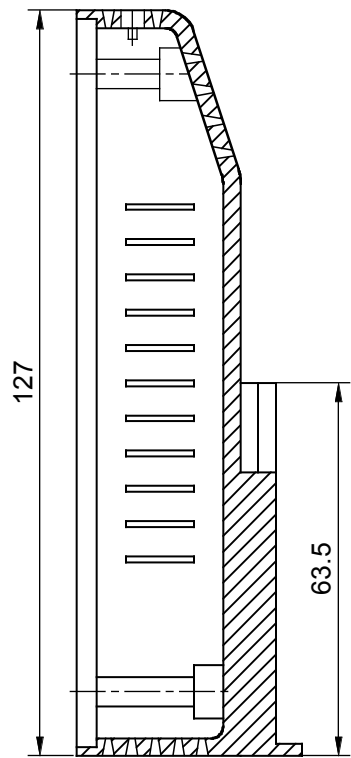
This housing is available for the CHT310 charger module. □



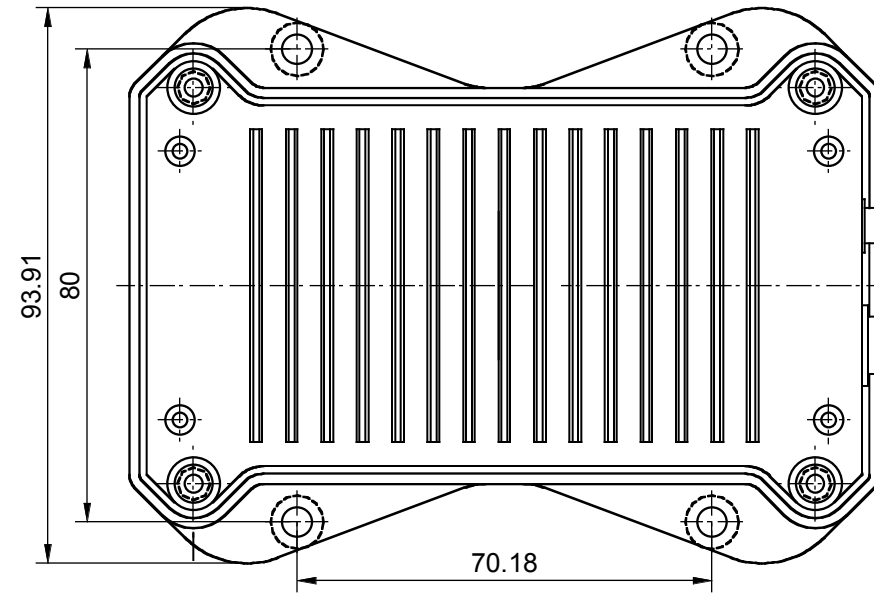
Cover



bottom housing

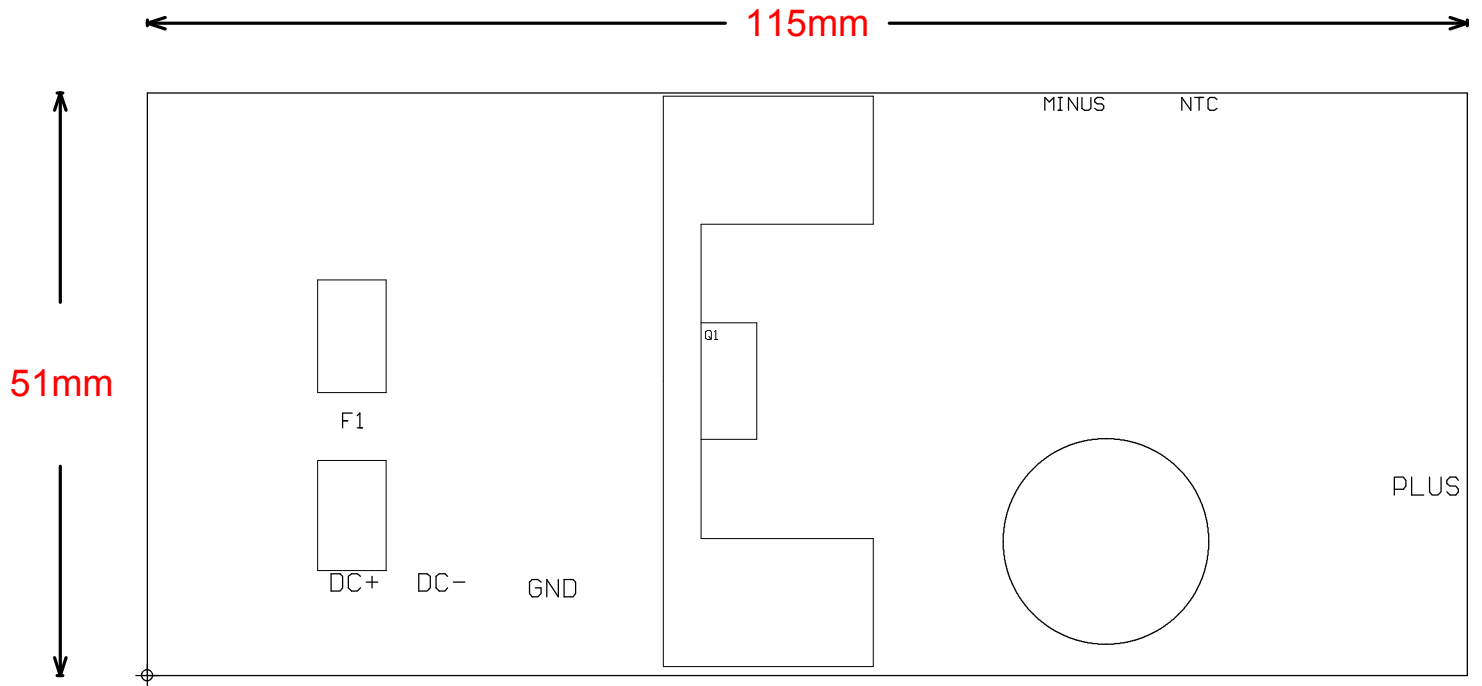


TOP VIEW



TOP VIEW

				unspecified tolerances according ISO 2768m	all dimensions in mm		
					scale not to scale	callisto electronics	
rev.	comment	date	sign.	drawn	date	sign.	drawing name housing for CHT3xx charger
				check.		LS	
				appr.			
				material			drawing number
							page 1
							of 1
							replaced by
							replacement date



Dimensions of CHT310 prototype

Prototype housing for CHT310 based charger

