



20W MCU controlled smart 4-stages battery charger

EPA1020-06/12 series

PowerCharger



## ■ Features

- AC100-240V input for worldwide used with wall mount plug US,EU,UK,AU
- Perfect for charging all 6V/12V SLA/VRLA/GEL/AGM/WET battery
- Fully automatic 4 stages charging process by MCU controlled
- 2Leds indicator for battery charging 50%,100%,An independent failure indicator
- 6V or 12V output by switch on,Maintaining the deep cycle battery
- Protections:Short circuit/OVP/OCP/Overload/Polarity reversed
- 100% full load and burn-in test
- High efficiency,long life and high reliability
- 2 years warranty

## ■ Applications

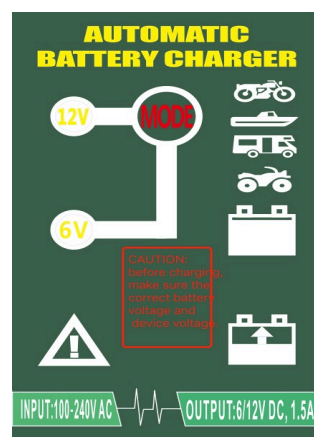
Suit battery:

- SLA/GEL/AGM 6V 7~60Ah
- VRLA/WET battery 12V 7~40AH
- e-bike,motorcycle,electric vehicle ,
- electric tools, emergency light, R/C toys,
- portable electronics devices ,
- field detection instrument

## ■ Description

EPA1020-06/12 series is a 20W 4 stages smart battery charger by MCU controlled with switch mode for 6V or 12V selectable the charging process is setting 4-stage:initialization,Bulk,Absorption,Float;initialization:the charger power on and detect the battery correct connct, When the battery correct connect,then the charger will give bulk current charging, "Absorption"stage is followed,the output voltage is limited at 14.7V;When the battery is nearly full,stage"float" will turn on duty, at this stage,the battery is charged completelyand the charger output some pulse to maintenance the battery

## ■ Display Panel



| LED  | Indication | Status            |
|------|------------|-------------------|
| 6V   | Lighting   | For 6V battery    |
| 12V  | Lighting   | For 12V battery   |
| Mode | Press      | 6V/12V selectable |
|      | Lighting   | Fault             |
|      | Flashing   | 50% charging      |
|      | Lighting   | 50% battery       |
|      | Flashing   | 100% charging     |
|      | Lighting   | Full/maintenance  |

## ■ Model Encoding

**EPA1020-06/12**



output voltage selectable

Outpower

Suit battery type(SLA,GEL,AGM,VRLA,Flooded,Wet)

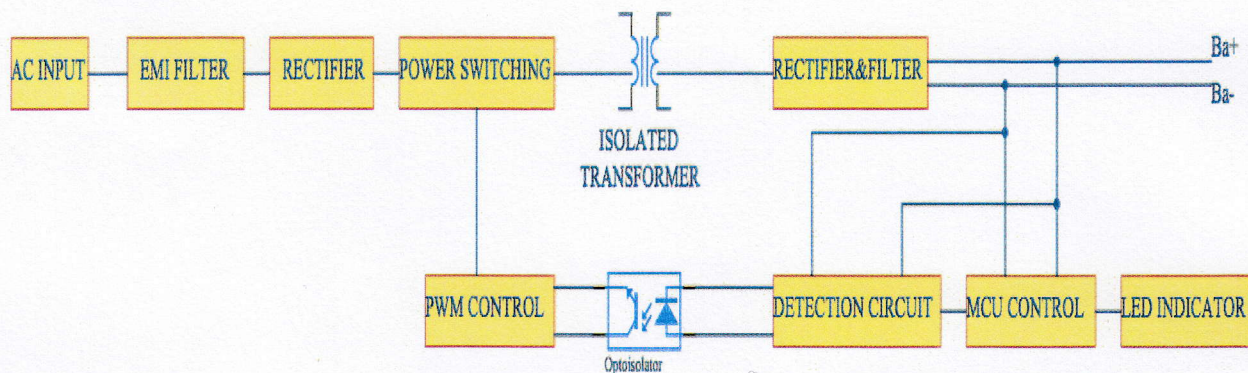


## ■Specification

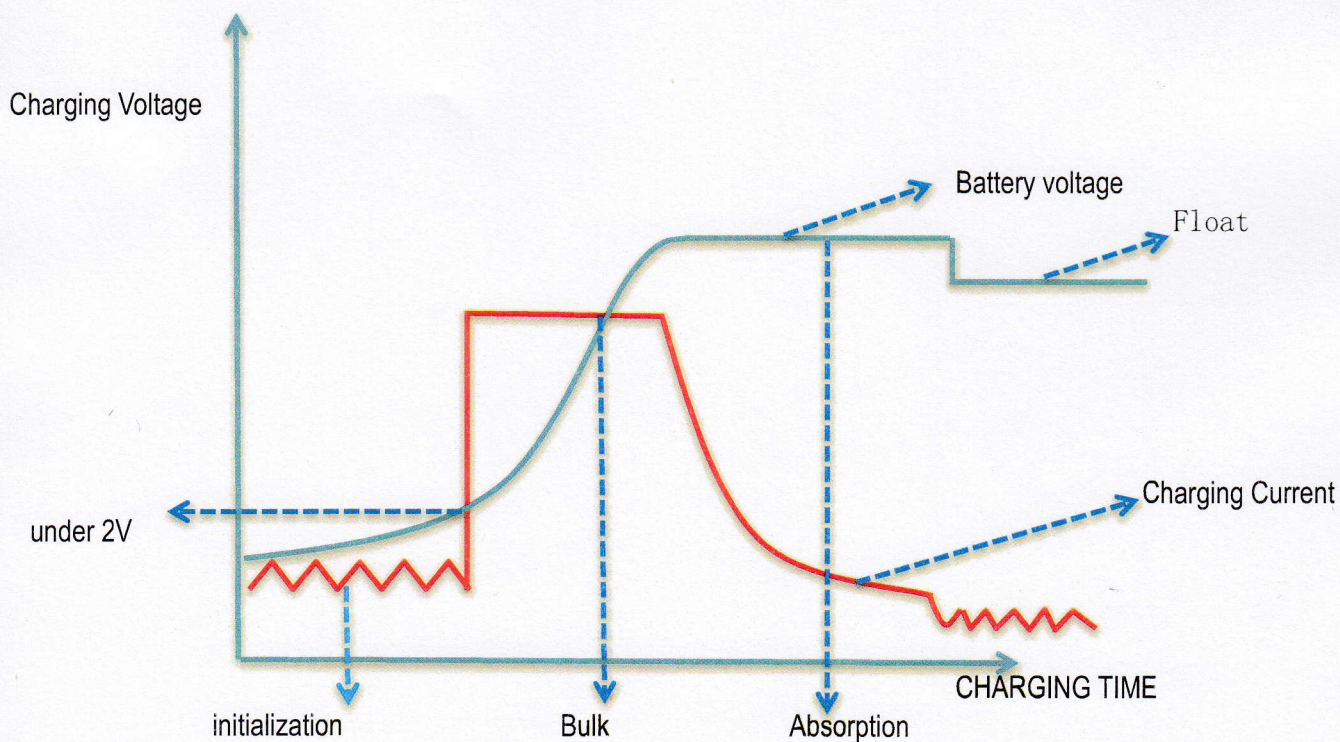
| Model       |                           | EPA1020-06  | EPA1020-12   | EPA1020-06/12              |
|-------------|---------------------------|---|--------------|----------------------------|
| OUTPUT      | DC Voltage                | 6.9V  | 13.8V        | 6.9V or 13.8V (selectable) |
|             | RATED CURRENT             | 0.75A-1.5A  | 0.75A-1.5A   | 0.75A-1.5A                 |
|             | RATED POWER               | 5.5W-11W  | 11W-22W      | 5.5W-11W or 11W-22W        |
|             | VOLTAGE RANGE             | 2~7.5V  | 2~15V        | 2~15V                      |
|             | CURRENT RANGE             | ±0.2A   | ±0.2A        | ±0.2A                      |
|             | VOLTAGE TOLERANCE         | ±1%   | ±1%          | ±1%                        |
|             | LINE REGULATION           | ±0.5%   | ±0.5%        | ±0.5%                      |
| INPUT       | VOLTAGE RANGE             | 100~240VAC  |              |                            |
|             | FREQUENCY RANGE           | 47~63Hz   |              |                            |
|             | EFFICIENCY                | 80%   |              |                            |
|             | AC CURRENT                | 0.6A/115 VAC 0.3A/230VAC  |              |                            |
| FUNCTION    | CHARGING PROCESS          | Ud-Im-Uo-Up   |              |                            |
|             | CHARGING MODE             | Fully automatically 4 stages by MCU controlled                                      |              |                            |
|             | FLOATING CHARGE CONDITION | 0.35A   |              |                            |
|             | CHARGING INDICATOR        | see the LED display frame   |              |                            |
|             | SUIT BATTERY              | 6V 3~40AH   | 12V 3~40Ah   | 6V 3~40AH or 12V 3~40Ah    |
|             | CHARGING TIME             | 4~24H   |              |                            |
| PROTECTION  | OVER VOLTAGE              | 7.5V(Limited)   | 15V(limited) |                            |
|             | OVER LOAD                 | 110~140% rated output power   |              |                            |
|             | OUTPUT SHORTED            | Fault LED Flash/Hiccup mode,recovers automatically after fault condition is removed |              |                            |
|             | POLARITY REVERSED         | Fault LED Flash/Hiccup mode,recovers automatically after fault condition is removed |              |                            |
| ENVIRONMENT | WORKING TEMP.             | -10 ~ +50°C   |              |                            |
|             | WORKING HUMIDITY          | 20~90% RH NON-CONDENSING  |              |                            |
|             | STORAGE TEMP.,HUMIDITY    | -10 ~ +50°C 20~90%  |              |                            |
|             | Cooling                   | Natural convection  |              |                            |
|             | water proof               | IP64 Dust protected,water splashing resistance                                      |              |                            |
|             | IMPACT                    | 1 Meter drop test>=3times   |              |                            |
| SAFETY      | SAFETY STANDARDS          | EN60950-1,EN55022,EN6900  |              |                            |
|             | EMC STANDARD              | T.B.D   |              |                            |
|             | MTBF                      | 30000 Hrs MIL-HDBK-217F   |              |                            |
|             | ESD                       | 8KV   |              |                            |
|             | ISOLATION RESISTANCE      | i/p to o/p: 3000V (1 min.)  |              |                            |
|             | MAX.TEMP.RISE             | < 40°C on casing  |              |                            |
| MECHANICAL  | WEIGHT                    | 200g  |              |                            |
|             | SIZE                      | 85*52.5*38MM  |              |                            |
|             | CASE                      | PLASTIC PC 945  |              |                            |



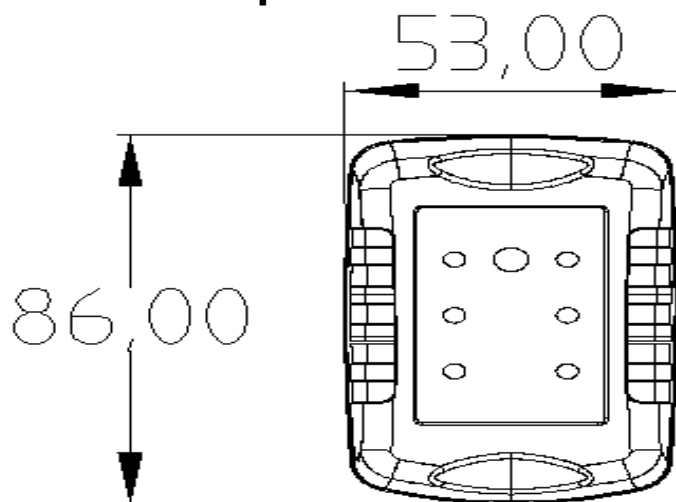
## ■Block Diagram



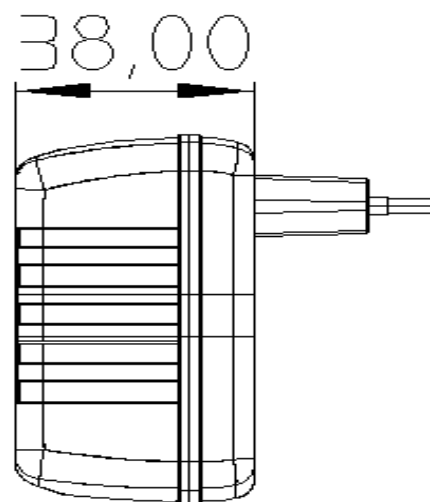
## ■CHARGING CURVES



## ■ Mechanical Specification



**DC Connector**



**NLA-1** (1.5×4.5×10mm)



**NLA-4** (2.5×5.5×12)



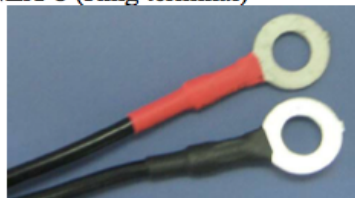
**NLA-3** (2.1×5.5×12)



**NLA-7** (L-Alligator clips, 15A)



**NLA-8** (Ring terminal)



**NLA-9** (SS-Alligator clips, 3A)

