



## 1200W High Reliable Ultra Wide Output Range Battery Charger & Power Supply 2-in-1 **NPP-1200 series**



AC input side



User's Manual



DC output side



UL62368-1



BS EN/EN62368-1  
BS EN/EN60335-1/2-29



IEC62368-1  
IEC60335-1/2-29



### ■ Features

- Multi-function single unit battery charger or power supply operation modes selectable
- Output voltage and current adjustable via potentiometer
- 3-stage charging curve for charging mode
- -30~+70°C wide operating temperature
- Multiple protections: Short circuit / Over load / Over voltage / Over temperature
- Thermal controlled DC fan for noise reduction
- Remote ON-OFF control
- Comply with 62368-1+60335-1/-2-29 dual certification
- Suitable for lead-acid (Pb) batteries
- Carry handle accessory available (Order NO.:DS-Carry handle, sold separately)
- 3 years warranty

### ■ Description

NPP-1200 is a miniaturized dual-purpose charger and power supply. In addition to being used as a three-stage charger for lead-acid batteries, it can also be used as a constant voltage output power supply to drive general load. The operating mode can be quickly switched by plugging or unplugging a connector on the front panel. Other features include: ultra-wide voltage output, adjustable voltage via VR on the panel (10.5~21V, 21~42V, 42~80V), adjustable charging current (50~100%), built-in intelligent fan with variable speed based on temperature to reduce noise and extend fan lifetime, -30~+70°C wide operating temperature, suitability for use in different environments, built-in remote ON/OFF control, compliance to IEC/EN/UL62368-1 and household EN60335-1/-2-29 dual safety, multiple built-in protections, and 3-year warranty. The NPP-1200 is truly an intelligent, safe, and reliable universal dual-purpose charger and power supply with outstanding cost performance.

### ■ Model Encoding

**NPP - 1200 - 24**

- Output voltage (12V/24V/48V)
- Rated wattage
- Series name

### ■ Applications

- Radio system backup solution
- Electric scooter charger
- Camping car 、 Buses 、 Heavy duty truck 、 Specialty vehicles
- Surveillance system
- Industrial automation machinery
- Industrial control system
- Mechanical and electrical equipment

### ■ GTIN CODE

MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

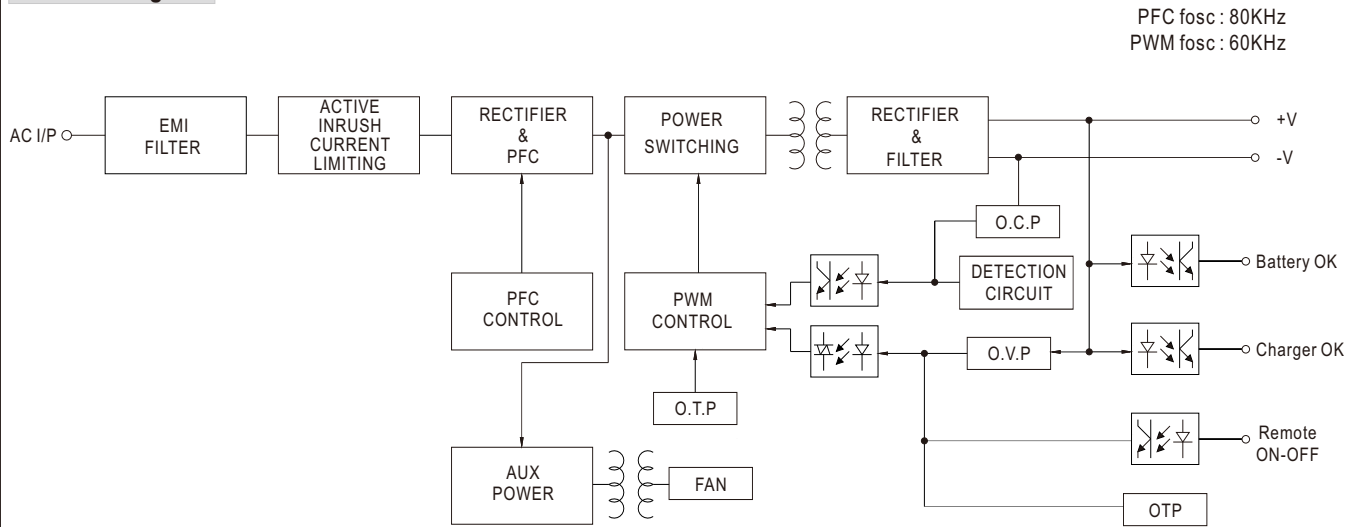
**SPECIFICATION for Battery Charger mode (Default)**

| MODEL                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | NPP-1200-12                                                                                                  | NPP-1200-24                                                              | NPP-1200-48                             |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------|
| OUTPUT                                          | BOOST CHARGE VOLTAGE(Vboost)(default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 14.4V                                                                                                        | 28.8V                                                                    | 57.6V                                   |
|                                                 | FLOAT CHARGE VOLTAGE(Vfloat)(default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 13.8V                                                                                                        | 27.6V                                                                    | 55.2V                                   |
|                                                 | VOLTAGE ADJUSTABLE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 10.5 ~ 21V                                                                                                   | 21 ~ 42V                                                                 | 42 ~ 80V                                |
|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | By built-in potentionmeter                                                                                   |                                                                          |                                         |
|                                                 | MAX. OUTPUT CURRENT(CC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 70A                                                                                                          | 36A                                                                      | 18A                                     |
|                                                 | CURRENT ADJUSTABLE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 35 ~ 70A                                                                                                     | 18 ~ 36A                                                                 | 9 ~ 18A                                 |
|                                                 | Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | By built-in potentionmeter                                                                                   |                                                                          |                                         |
| MAX. POWER                                      | 1176W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1209.6W                                                                                                      | 1209.6W                                                                  |                                         |
| RECOMMENDED BATTERY CAPACITY (AMP HOURS) Note.4 | 240 ~ 800AH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 120 ~ 420AH                                                                                                  | 60 ~ 210AH                                                               |                                         |
| INPUT                                           | VOLTAGE RANGE Note.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 90 ~ 264VAC 127 ~ 370VDC                                                                                     |                                                                          |                                         |
|                                                 | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 47 ~ 63Hz                                                                                                    |                                                                          |                                         |
|                                                 | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PF>0.98/115VAC, PF>0.95/230VAC at full load                                                                  |                                                                          |                                         |
|                                                 | EFFICIENCY (Typ.) Note.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 92%                                                                                                          | 93%                                                                      | 94%                                     |
|                                                 | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 12A/115VAC 6.5A/230VAC                                                                                       |                                                                          |                                         |
|                                                 | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | COLD START 50A at 230VAC                                                                                     |                                                                          |                                         |
| PROTECTION                                      | SHORT CIRCUIT Note.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Protection type : Constant current limiting, charger will shutdown after 5 sec, re-power on to recover       |                                                                          |                                         |
|                                                 | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 21.5 ~ 26V                                                                                                   | 43 ~ 52V                                                                 | 82 ~ 100V                               |
|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Protection type : Shut down and latch off o/p voltage, re-power on to recover                                |                                                                          |                                         |
| OVER TEMPERATURE                                | Shut down O/P voltage, recovers automatically after temperature goes down                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                              |                                                                          |                                         |
| FUNCTION                                        | CHARGING STAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3 stage only                                                                                                 |                                                                          |                                         |
|                                                 | CHARGER OK SIGNAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | The TTL signal out, Charger OK = H(4.5 ~ 5.5V) ; Charger failure or protection status =L( -0.5 ~ +0.5V)      |                                                                          |                                         |
|                                                 | BATTERY FULL SIGNAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | The TTL signal out, Battery full = H(4.5 ~ 5.5V) ; Charging = L(-0.5 ~ +0.5V)                                |                                                                          |                                         |
|                                                 | REMOTE CONTROL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Open : Charger stop charging Short : Charger normal work                                                     |                                                                          |                                         |
|                                                 | FAN ON/OFF CONTROL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Depends on internal temperature                                                                              |                                                                          |                                         |
| ENVIRONMENT                                     | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -30 ~ +70℃ (Refer to "Derating Curve")                                                                       |                                                                          |                                         |
|                                                 | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 20 ~ 95% RH non-condensing                                                                                   |                                                                          |                                         |
|                                                 | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | -40 ~ +85℃, 10 ~ 95% RH non-condensing                                                                       |                                                                          |                                         |
|                                                 | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ±0.05%/℃ (0 ~ 50℃ )                                                                                          |                                                                          |                                         |
|                                                 | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                                 |                                                                          |                                         |
| SAFETY & EMC (Note 8)                           | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CB IEC62368-1,IEC60335-1/2-29, Dekra BS EN/EN62368-1,BS EN/EN60335-1/2-29, UL62368-1, EAC TP TC 004 approved |                                                                          |                                         |
|                                                 | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC                                                                    |                                                                          |                                         |
|                                                 | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                    |                                                                          |                                         |
|                                                 | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Parameter                                                                                                    | Standard                                                                 | Test Level / Note                       |
|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Conducted                                                                                                    | BS EN/EN55032 (CISPR32),BS EN/EN55014-1                                  | Class B                                 |
|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Radiated                                                                                                     | BS EN/EN55032 (CISPR32),BS EN/EN55014-1                                  | Class A                                 |
|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Harmonic Current                                                                                             | BS EN/EN61000-3-2                                                        | Class A                                 |
|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Voltage Flicker                                                                                              | BS EN/EN61000-3-3                                                        | -----                                   |
|                                                 | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Parameter                                                                                                    | Standard                                                                 | Test Level / Note                       |
|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ESD                                                                                                          | BS EN/EN61000-4-2                                                        | Level 3, 8KV air ; Level 2, 4KV contact |
| Radiated                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | BS EN/EN61000-4-3                                                                                            | Level 2, 3V/m                                                            |                                         |
| EFT / Burst                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | BS EN/EN61000-4-4                                                                                            | Level 2, 1KV                                                             |                                         |
| Surge                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | BS EN/EN61000-4-5                                                                                            | Level 3, 1KV/Line-Line,Level 3, 2KV/Line-Earth                           |                                         |
| Conducted                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | BS EN/EN61000-4-6                                                                                            | Level 2, 3Vrms                                                           |                                         |
| Magnetic Field                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | BS EN/EN61000-4-8                                                                                            | Level 1, 1A/m                                                            |                                         |
| Voltage Dips and Interruptions                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | BS EN/EN61000-4-11                                                                                           | >95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods |                                         |
| OTHERS                                          | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 625.1K hrs min. Telcordia SR-332 (Bellcore) ; 63.6K hrs min. MIL-HDBK-217F (25℃)                             |                                                                          |                                         |
|                                                 | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 250*158*67mm (L*W*H)                                                                                         |                                                                          |                                         |
|                                                 | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1.93Kg; 4pcs/ 10Kg / 1.72CUFT                                                                                |                                                                          |                                         |
| NOTE                                            | 1. Modification for charger specification may be required for different battery specification. Please contact battery vendor and MEAN WELL for details.<br>2. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>3. Float charge voltage(Vfloat) adjustable via potentiomerter in battery charger mode.<br>4. This is MEAN WELL's suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation.<br>5. Derating may be needed under low input voltages. Please check the derating curve for more details.<br>6. The efficiency is measured at 16.8V charge voltage(12V model), 33.6V charge voltage(24V model), 67.2V charge voltage(48V model).<br>7. This protection mechanism is specified for the case the short circuit occurs after the charger is turned on.<br>8. The charger is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 600mm*900mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."<br>(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> )<br>9. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                              |                                                                          |                                         |

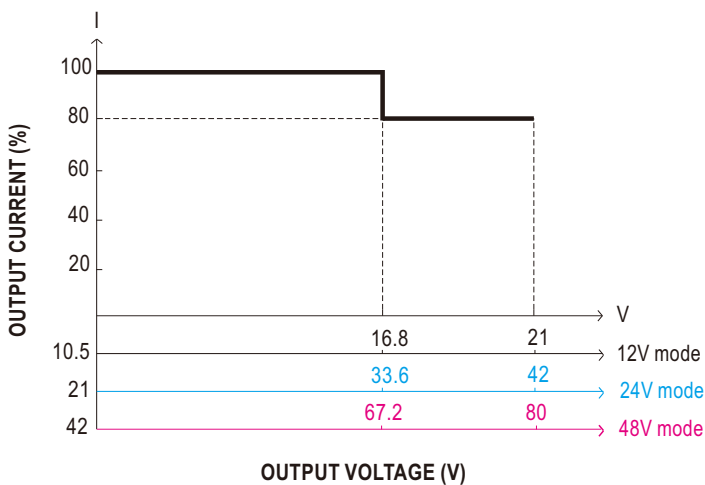
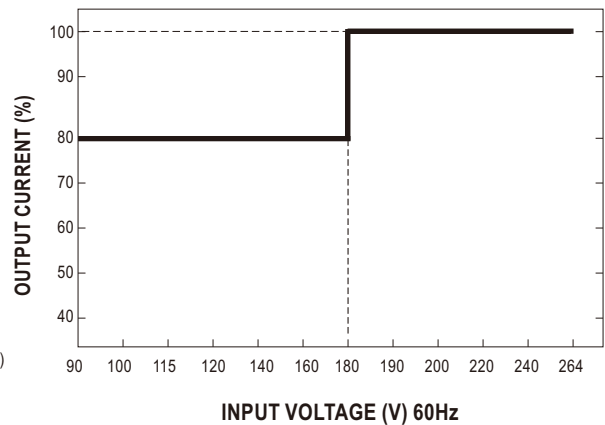
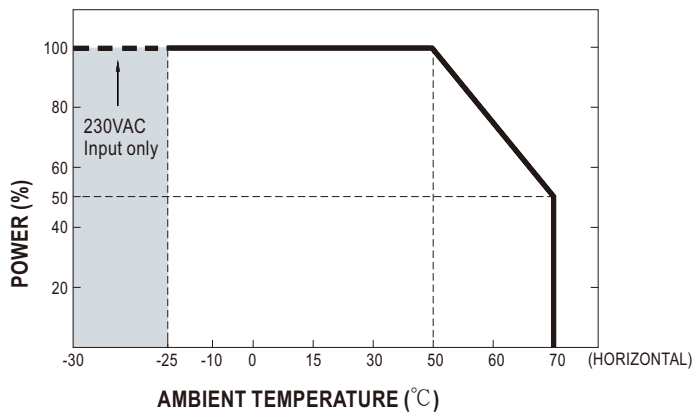
**SPECIFICATION for Power Supply mode (Selectable via pin3 & 4 jumper of 14pins connector on panel)**

| MODEL                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | NPP-1200-12                                                                                                                          | NPP-1200-24                             | NPP-1200-48                                                              |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------|
| OUTPUT                   | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 14.4V                                                                                                                                | 28.8V                                   | 57.6V                                                                    |
|                          | VOLTAGE ADJUSTABLE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10.5 ~ 21V                                                                                                                           | 21 ~ 42V                                | 42 ~ 80V                                                                 |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | By built-in potentiometer                                                                                                            |                                         |                                                                          |
|                          | CURRENT ADJUSTABLE RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 35 ~ 70A                                                                                                                             | 18 ~ 36A                                | 9 ~ 18A                                                                  |
|                          | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 70A                                                                                                                                  | 36A                                     | 18A                                                                      |
|                          | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1176W                                                                                                                                | 1209.6W                                 | 1209.6W                                                                  |
|                          | RIPPLE & NOISE(max.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 180mVp-p                                                                                                                             | 300mVp-p                                | 480mVp-p                                                                 |
|                          | VOLTAGE TOLERANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ± 1.0%                                                                                                                               | ± 1.0%                                  | ± 1.0%                                                                   |
|                          | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ± 0.5%                                                                                                                               | ± 0.5%                                  | ± 0.5%                                                                   |
|                          | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ± 1.0%                                                                                                                               | ± 1.0%                                  | ± 0.5%                                                                   |
| SETUP, RISE TIME         | 1800ms, 60ms/230VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                      |                                         |                                                                          |
| HOLD UP TIME (Typ.)      | 16ms/230VAC at 75% load    10ms/230VAC at full load                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                      |                                         |                                                                          |
| INPUT                    | VOLTAGE RANGE      Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 90 ~ 264VAC    127 ~ 370VDC                                                                                                          |                                         |                                                                          |
|                          | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 47 ~ 63Hz                                                                                                                            |                                         |                                                                          |
|                          | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | PF>0.98/115VAC, PF>0.95/230VAC at full load                                                                                          |                                         |                                                                          |
|                          | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 92%                                                                                                                                  | 93%                                     | 94%                                                                      |
|                          | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 12A/115VAC    6.5A/230VAC                                                                                                            |                                         |                                                                          |
| INRUSH CURRENT (Typ.)    | COLD START    50A at 230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                      |                                         |                                                                          |
| PROTECTION               | OVERLOAD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 105 ~ 115% rated output power<br>Protection type : Constant current limiting, unit will shutdown after 5 sec, re-power on to recover |                                         |                                                                          |
|                          | SHORT CIRCUIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Protection type : Constant current limiting, unit will shutdown after 5 sec, re-power on to recover                                  |                                         |                                                                          |
|                          | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 21.5 ~ 26V                                                                                                                           | 43 ~ 52V                                | 82 ~ 100V                                                                |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Protection type : Shut down and latch off o/p voltage, re-power on to recover                                                        |                                         |                                                                          |
|                          | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Shut down O/P voltage, recovers automatically after temperature goes down                                                            |                                         |                                                                          |
| FUNCTION                 | REMOTE CONTROL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Open : Power OFF    Short : Power ON                                                                                                 |                                         |                                                                          |
|                          | DC OK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | The TTL signal out, DC OK = H(4.5 ~ 5.5V) ; Power supply failure or protection = L(-0.5 ~ +0.5V)                                     |                                         |                                                                          |
|                          | FAN SPEED CONTROL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Depends on internal temperature                                                                                                      |                                         |                                                                          |
| ENVIRONMENT              | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | -30 ~ +70℃ (Refer to "Derating Curve")                                                                                               |                                         |                                                                          |
|                          | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 20 ~ 95% RH non-condensing                                                                                                           |                                         |                                                                          |
|                          | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -40 ~ +85℃, 10 ~ 95% RH non-condensing                                                                                               |                                         |                                                                          |
|                          | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ± 0.05%/℃ (0 ~ 50℃ )                                                                                                                 |                                         |                                                                          |
|                          | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes                                                                         |                                         |                                                                          |
| SAFETY & EMC<br>(Note 4) | SAFETY STANDARDS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | CB IEC62368-1,IEC60335-1/2-29, Dekra BS EN/EN62368-1,BS EN/EN60335-1/2-29, UL62368-1, EAC TP TC 004 approved                         |                                         |                                                                          |
|                          | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | I/P-O/P:3KVAC    I/P-FG:2KVAC    O/P-FG:0.5KVAC                                                                                      |                                         |                                                                          |
|                          | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃ / 70% RH                                                                            |                                         |                                                                          |
|                          | EMC EMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Parameter                                                                                                                            | Standard                                | Test Level / Note                                                        |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Conducted                                                                                                                            | BS EN/EN55032 (CISPR32),BS EN/EN55014-1 | Class B                                                                  |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Radiated                                                                                                                             | BS EN/EN55032 (CISPR32),BS EN/EN55014-1 | Class A                                                                  |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Harmonic Current                                                                                                                     | BS EN/EN61000-3-2                       | Class A                                                                  |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Voltage Flicker                                                                                                                      | BS EN/EN61000-3-3                       | -----                                                                    |
|                          | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Parameter                                                                                                                            | Standard                                | Test Level / Note                                                        |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ESD                                                                                                                                  | BS EN/EN61000-4-2                       | Level 3, 8KV air ; Level 2, 4KV contact                                  |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Radiated                                                                                                                             | BS EN/EN61000-4-3                       | Level 2, 3V/m                                                            |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | EFT / Burst                                                                                                                          | BS EN/EN61000-4-4                       | Level 2, 1KV                                                             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Surge                                                                                                                                | BS EN/EN61000-4-5                       | Level 3, 1KV/Line-Line,Level 3, 2KV/Line-Earth                           |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Conducted                                                                                                                            | BS EN/EN61000-4-6                       | Level 2, 3Vrms                                                           |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Magnetic Field                                                                                                                       | BS EN/EN61000-4-8                       | Level 1, 1A/m                                                            |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Voltage Dips and Interruptions                                                                                                       | BS EN/EN61000-4-11                      | >95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods |
| OTHERS                   | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 625.1K hrs min.    Telcordia SR-332 (Bellcore) ;    63.6K hrs min.    MIL-HDBK-217F (25℃)                                            |                                         |                                                                          |
|                          | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 250*158*67mm (L*W*H)                                                                                                                 |                                         |                                                                          |
|                          | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1.93Kg; 4pcs/ 10Kg / 1.72CUFT                                                                                                        |                                         |                                                                          |
| NOTE                     | 1. Modification for charger specification may be required for different battery specification. Please contact battery vendor and MEAN WELL for details.<br>2. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>3. Derating may be needed under low input voltages. Please check the derating curve for more details.<br>4. The PSU is considered a component which will be installed into a final equipment. All the EMC tests are been executed by mounting the unit on a 600mm*900mm metal plate with 1mm of thickness. The final equipment must be re-confirmed that it still meets EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."<br>(as available on <a href="http://www.meanwell.com">http://www.meanwell.com</a> )<br>5. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).<br>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a> |                                                                                                                                      |                                         |                                                                          |

## Block Diagram



## Derating Curve

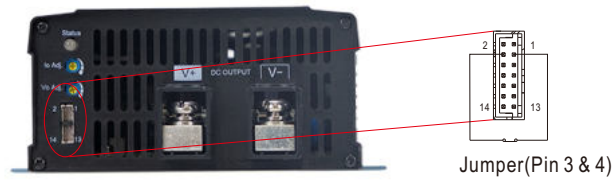


◎ The rated current change with the output voltage .

## ■ Function Manual

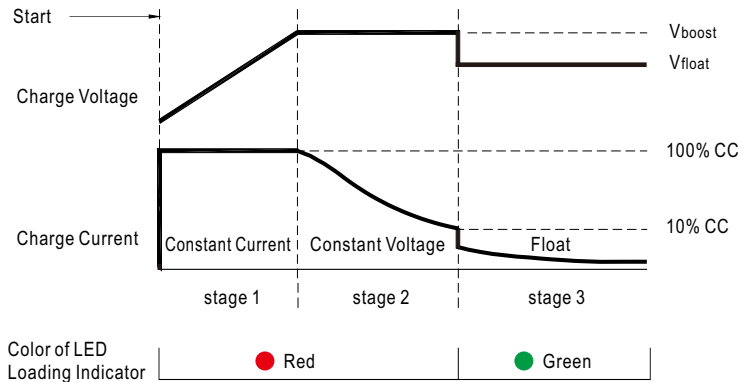
### 1. Battery Charger or Power Supply Operation modes selectable via pin3 and pin4 jumper

|                       |                                |
|-----------------------|--------------------------------|
| Between pin3 and pin4 | Operation modes                |
| Jumper connected      | Power supply mode              |
| Jumper removed        | Battery charger mode (Default) |



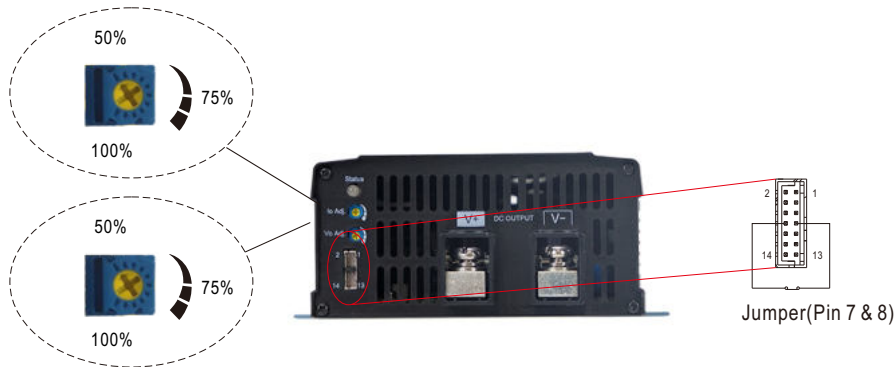
### 2.Charging Curve (Charging Mode)

◎ 3 stage charging curve



| State            | NPP-1200-12 | NPP-1200-24 | NPP-1200-48 |
|------------------|-------------|-------------|-------------|
| Constant Current | 70A         | 36A         | 18A         |
| Vboost           | 14.4V       | 28.8V       | 57.6V       |
| Vfloat           | 13.8V       | 27.6V       | 55.2V       |

◎ Suitable for lead-acid batteries (flooded, Gel and AGM)



※  $V_o \times I_o$  must be less than or equal to the rated power. Please refer to derating curve (page 4) .

### 3.Charger OK / DC OK Signal

Charger OK / DC OK signal is a TTL level signal.

The maximum sourcing current is 10mA.

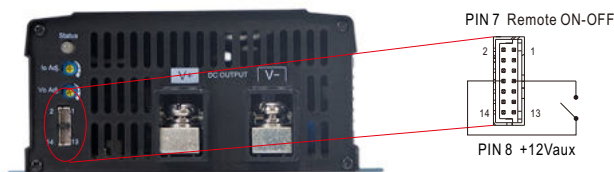
| Charger OK / DC OK signal | Charger status                           |
|---------------------------|------------------------------------------|
| "High" : 4.5 ~ 5.5V       | Work normally                            |
| "Low" : -0.5 ~ 0.5V       | Failure or protection function activated |



### 4.Remote ON-OFF Control

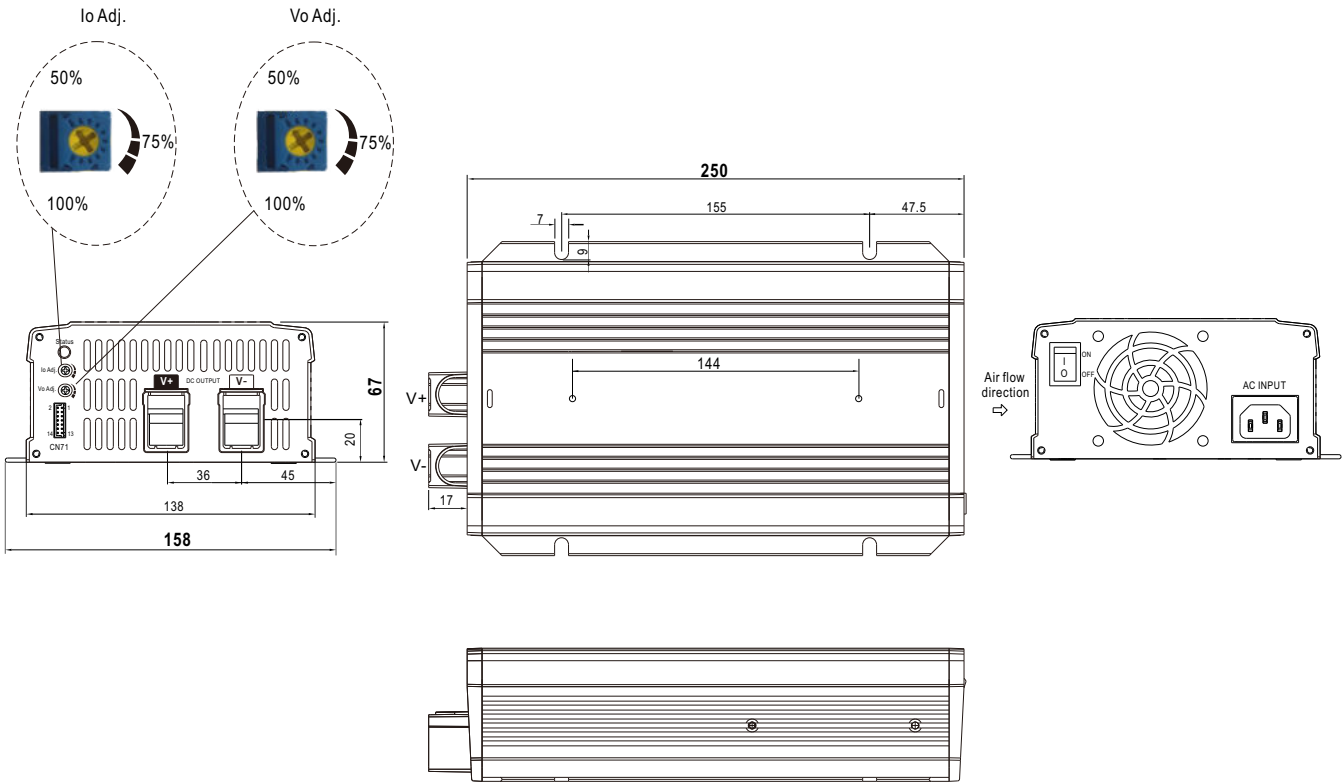
The NPP-1200 can be turned ON/OFF by using the "Remote Control" function.

| Between pin7 remote ON-OFF and pin8 +12Vaux | Charger status |
|---------------------------------------------|----------------|
| Short ( Pin 7 = 10.8 ~ 13.2V)               | ON (Default)   |
| Open ( Pin 7 = -0.5 ~ 0.5V)                 | OFF            |



## Mechanical Specification

Case No.285B Unit:mm



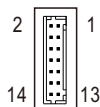
※ Connector Pin No. Assignment : HRS DF11-14DP-2DS or equivalent

| Pin No.   | Assignment                                             | Mating Housing              | Terminal                    |
|-----------|--------------------------------------------------------|-----------------------------|-----------------------------|
| 1,2,11~14 | NC                                                     | HRS DF11-14DS or equivalent | HRS DF11-14SC or equivalent |
| 3,4       | Battery Charger or Power Supply mode selectable        |                             |                             |
| 5         | Battery Full                                           |                             |                             |
| 6         | Charger OK (Charger mode) or DC OK (Power supply mode) |                             |                             |
| 7         | Remote ON-OFF                                          |                             |                             |
| 8         | +12V-AUX                                               |                             |                             |
| 9,10      | GND-AUX                                                |                             |                             |

※ LED Status Table

| Charger (Default) |                                       |
|-------------------|---------------------------------------|
| LED Indicator     | Status                                |
| ● Green           | Float stage (stage 3) or full charged |
| ● Red             | Charging (stage 1 or stage 2)         |
| ○ No Light        | Abnormal                              |
| Power supply mode |                                       |
| LED Indicator     | Status                                |
| ● Green           | Normal working                        |
| ○ No Light        | Abnormal                              |

※ Control Pin No. Assignment : HRS DF11-14DP-2DS or equivalent



|                |                             |
|----------------|-----------------------------|
| Mating Housing | HRS DF11-14DS or equivalent |
| Terminal       | HRS DF11-**SC or equivalent |

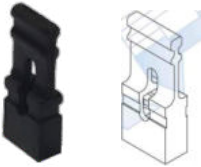
| Pin No.   | Function                       | Description                                                                                                                                                                                                                                                                                                            |
|-----------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1,2,11~14 | NC                             | -----                                                                                                                                                                                                                                                                                                                  |
| 3,4       | Battery charger / Power supply | Open: Battery charger, Color of LED loading indicator: Reference to battery charger.<br>Short: Power supply, Color of LED loading indicator :Green.                                                                                                                                                                    |
| 5         | Battery Full                   | Battery Full Signal, referenced to GND-AUX(Pin 9 & 10).<br>The Signal is a TTL level signal. The maximum sourcing current is 10mA and only for output.(Note.2)<br>Low (-0.5 ~ 0.5V) : When the battery is charging.<br>High (4.5 ~ 5.5V) : When the battery is full.                                                   |
| 6         | Charger OK / DC OK             | Charger OK / DC OK Signal, referenced to GND-AUX(Pin 9 & 10).<br>The Signal is a TTL level signal. The maximum sourcing current is 10mA and only for output.(Note.2)<br>Low (-0.5 ~ 0.5V) : When the charger fails or the protect function is activating.<br>High (4.5 ~ 5.5V) : When the charger is working properly. |
| 7         | Remote ON-OFF                  | Remote charger ON/OFF Function.<br>The charger can turn the output ON/OFF by dry contact between Remote ON-OFF and +12V-AUX.(Note.2)<br>Short (10.8 ~ 13.2V) : Charger ON ; Open(-0.5 ~ 0.5V) : Charger OFF ; The maximum input voltage is 13.2V.                                                                      |
| 8         | +12V-AUX                       | It is controlled by the Remote ON-OFF control.                                                                                                                                                                                                                                                                         |
| 9,10      | GND-AUX                        | The signal return is isolated from the output terminal. (+V & -V)                                                                                                                                                                                                                                                      |

Note1: Non-isolated signal, referenced to [GND(signal)].

Note2: Isolated signal, referenced to GND-AUX

## ■ Accessory List

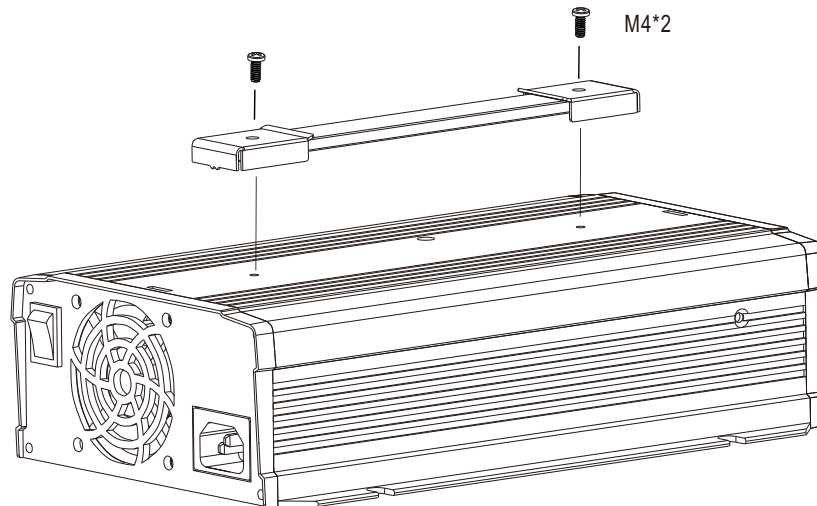
※ Battery Charger or Power Supply mode of pin 3 and pin 4 mating pin along with NPP-1200 (Standard accessory)

| Pin 3 and Pin 4 mating pin                                                                                              | Quantity |
|-------------------------------------------------------------------------------------------------------------------------|----------|
| <br>1FF1HMJ20-020-95BS or equivalent | 1        |

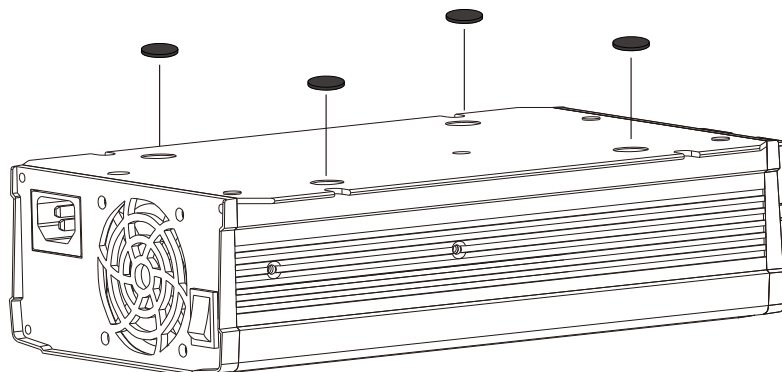
※ Carry handle (Optional accessory, battery charger and pull handle should be ordered seperately)

| MW's Order No.  | Item |                                                                                             | Quantity |
|-----------------|------|---------------------------------------------------------------------------------------------|----------|
| DS-Carry Handle | ①    | Handle    | 1        |
|                 | ②    | Foot pad  | 4        |
|                 | ③    | Screw     | 2        |

① Handle



② Foot pad



## ■ INSTALLATION MANUAL

Please refer to : <http://www.meanwell.com/manual.html>