



AC input side



User's Manual



DC output side



## Features

- Auto ranging with ultra-wide charging voltage (10.5~21V, 21~42V, 42~80V; Please refer to page 8 for setting)
- Built-in CANBus protocol for control, setting and monitoring
- Programmable 2/3 stage and charging curve via SBP-001
- Manual setting for 2/3 stage and 4 built-in charging curves via DIP S.W
- Multiple protections:  
Short circuit / Over voltage / Over temperature/ Battery under voltage /Battery reverse polarity (No damage)
- Charger OK and Battery Full signal
- Temperature compensation function to prolong battery life (Lead-acid only)
- -30°C~+70°C wide operating temperature
- Thermal controlled DC fan for noise reduction
- Remote ON/OFF control
- Smart programmer available (Order NO.: SBP-001 , sold separately)
- Carry handle accessory available(Order NO.: DS-Carry handle, sold separately)
- Comply with 62368-1 + 60335-1/-2-29 dual certification
- Suitable for lead-acid (Pb) and li-ion batteries
- 3 years warranty

## Description

NPB-1700 is a miniaturized, versatile, and ultra-wide voltage intelligent charger. It utilizes a fully digital control design with automatic battery voltage detection technology, with five key features including intelligent, versatile, user friendly, safe, and compact. The series have four models with output voltage ranges of 10.5~21V, 21~42V and 42~80V respectively. The charging voltage range of each model is wide enough to cover a variety of different battery voltages and battery chemistries, and there is a built-in intelligent voltage detection charging mode (Note this mode is set to OFF by factory default and is suitable for lithium batteries with BMS only). The NPB-1700 can pair with MEAN WELL's SBP-001 programmer for digital configuration, such as select 2/3 stage charging, adjust charging voltage/current, and set charging cycle time to protect battery lifetime. Through the user-friendly DIP S.W. on front panel, user may also directly adjust the 2/3 stage charging, current (50~100%), and select between the 4 types of preset charging curves. In addition, a CANBus communication protocol is built in to meet professional applications, which allows remote controlling and monitoring for the status of the charger. In terms of safety, it has intelligent detection for proper battery voltage and connection as well as protection from reverse polarity. It passes ITE IEC/EN/UL62368-1 and household appliances EN60335-1/-2-29 dual safety and 3-year warranty to guarantee reliable operation. The NPB-1700 is truly an intelligent, safe, and reliable universal charger with outstanding cost performance.

## Model Encoding

NPB - 1700 - 24

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

## Applications

- AGV
- E-Bike, E-Scooter, Camping car, Bus, Specialty vehicles
- Robotic lawn mower
- Washing robot
- Recreation craft, Personal yacht or workboat
- Surveillance system
- Telecommunication base station
- Radio system backup solution
- Equipments or instruments with back-up battery

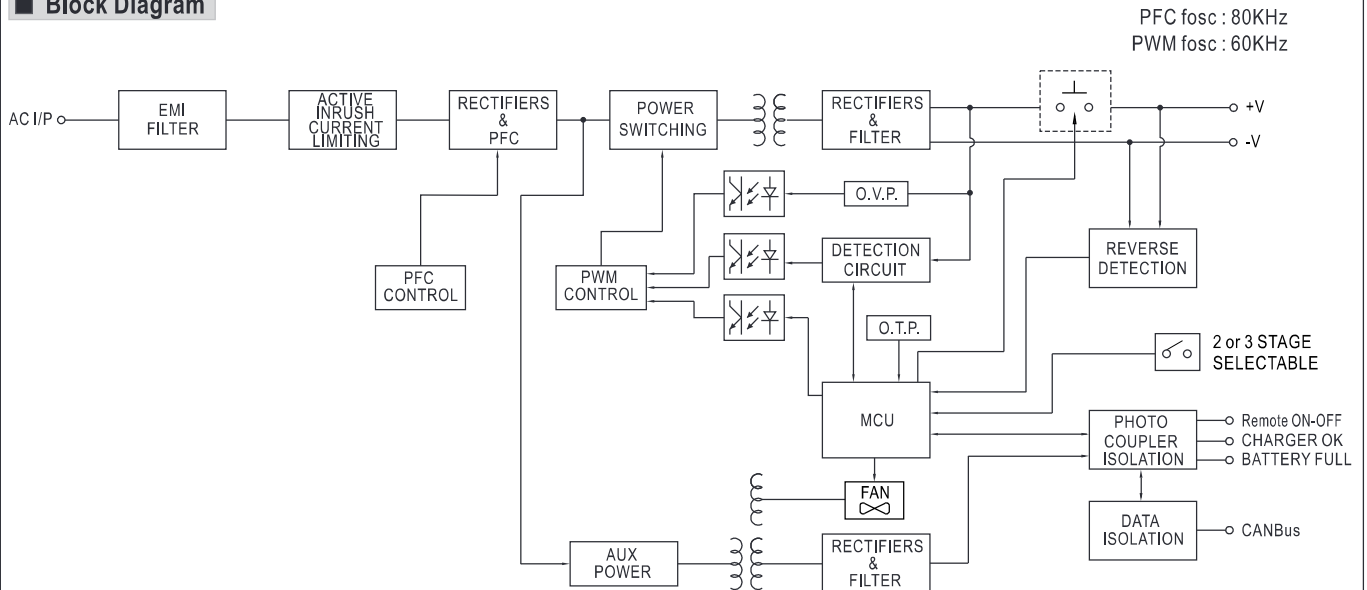
## GTIN CODE

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

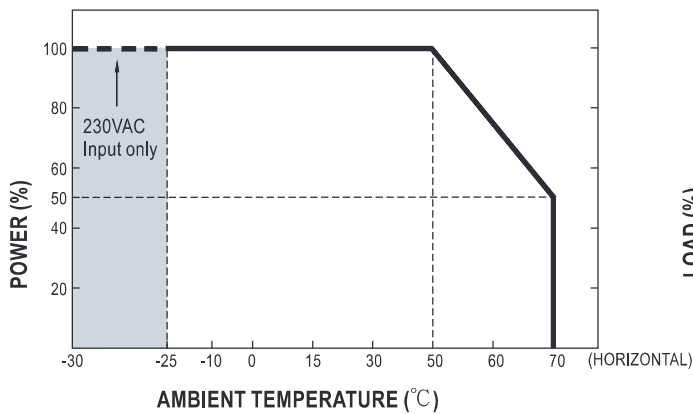
# SPECIFICATION

| MODEL                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | NPB-1700-12                                                                                                                                 |                                         | NPB-1700-24                                                              |                   | NPB-1700-48 |  |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------------------|-------------------|-------------|--|
| OUTPUT                         | BOOST CHARGE VOLTAGE(Vboost)(default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 14.4V                                                                                                                                       |                                         | 28.8V                                                                    |                   | 57.6V       |  |
|                                | FLOAT CHARGE VOLTAGE(Vfloat)(default)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 13.8V                                                                                                                                       |                                         | 27.6V                                                                    |                   | 55.2V       |  |
|                                | CHARGE VOLTAGE RANGE <small>Note.3</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 10.5 ~ 21V                                                                                                                                  |                                         | 21 ~ 42V                                                                 |                   | 42 ~ 80V    |  |
|                                | MAX. OUTPUT CURRENT(CC) <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 85A                                                                                                                                         |                                         | 50A                                                                      |                   | 25A         |  |
|                                | MAX. POWER <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1428W                                                                                                                                       |                                         | 1680W                                                                    |                   | 1680W       |  |
|                                | RECOMMENDED BATTERY CAPACITY (AMP HOURS) <small>Note.5</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 300 ~ 1000AH                                                                                                                                |                                         | 200 ~ 640AH                                                              |                   | 100 ~ 330AH |  |
|                                | LEAKAGE CURRENT FROM BATTERY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <1mA                                                                                                                                        |                                         |                                                                          |                   |             |  |
| INPUT                          | VOLTAGE RANGE <small>Note.6</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 90 ~ 264VAC      250 ~ 370VDC                                                                                                               |                                         |                                                                          |                   |             |  |
|                                | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 47 ~ 63Hz                                                                                                                                   |                                         |                                                                          |                   |             |  |
|                                | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | PF>0.98/115VAC, PF>0.95/230VAC at full load                                                                                                 |                                         |                                                                          |                   |             |  |
|                                | EFFICIENCY (Typ.) <small>Note.7</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 92%                                                                                                                                         |                                         | 93%                                                                      |                   | 94%         |  |
|                                | AC CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 14.8A/115VAC                                                                                                                                |                                         | 9.3A/230VAC                                                              |                   |             |  |
|                                | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | COLD START    50A at 230VAC                                                                                                                 |                                         |                                                                          |                   |             |  |
| LEAKAGE CURRENT                | 0.75mA/240VAC (60335-1/2-29), 1.5mA Peak/240VAC (62368-1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                             |                                         |                                                                          |                   |             |  |
| PROTECTION                     | SHORT CIRCUIT <small>Note.8</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Protection type : Constant current limiting, charger will shutdown, re-power on to recover                                                  |                                         |                                                                          |                   |             |  |
|                                | OVER VOLTAGE <small>Note.9</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 21.5 ~ 26V                                                                                                                                  |                                         | 43 ~ 52V                                                                 |                   | 82 ~ 100V   |  |
|                                | REVERSE POLARITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Protection type : Shut down and latch off o/p voltage, re-power on to recover                                                               |                                         |                                                                          |                   |             |  |
|                                | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Protected internal reverse detection, No damage, re-power on to recover after fault condition is removed                                    |                                         |                                                                          |                   |             |  |
| FUNCTION                       | CHARGING STAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Shut down O/P voltage, recovers automatically after temperature goes down                                                                   |                                         |                                                                          |                   |             |  |
|                                | CHARGING PARAMETERS ADJUSTABLE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2 or 3 stage selectable through DIP S.W on panel, or SBP-001 with computer                                                                  |                                         |                                                                          |                   |             |  |
|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Programmable: Constant current(CC), Tapper current(TC), Constant voltage(CV) and Float voltage(FV) can be set through SBP-001 with computer |                                         |                                                                          |                   |             |  |
|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Manual setting: 4 built-in charging curves adjustable via DIP S.W on panel, Please refer to function manual for more detail                 |                                         |                                                                          |                   |             |  |
|                                | AUTO RANGING FOR CHARGING (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Please refer to functin manual for more detail (page 8)                                                                                     |                                         |                                                                          |                   |             |  |
|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Charging current adjustable 50~100% by via potentiometer on panel (Only for auto ranging mode)                                              |                                         |                                                                          |                   |             |  |
|                                | CANBUS INTERFACE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | CANBus 2.0B, Can control, Setting and monitoring(Vo,Io, charging curve, internal temp. and DC output ON/OFF)                                |                                         |                                                                          |                   |             |  |
|                                | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Short : Charger normal work      Open : Charger stop charging                                                                               |                                         |                                                                          |                   |             |  |
|                                | TEMPERATURE COMPENSATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | By external NTC                                                                                                                             |                                         |                                                                          |                   |             |  |
| 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 10)      | 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 2, 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 478.9K hrs min.    Telcordia SR-332 (Bellcore) ; 41.5K hrs min.    MIL-HDBK-217F (25℃)                                                      |                                         |                                                                          |                   |             |  |
|                                | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 300*184*70mm (L*W*H)                                                                                                                        |                                         |                                                                          |                   |             |  |
|                                | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2.96Kg; 4pcs/ 14Kg / 2.58CUFT                                                                                                               |                                         |                                                                          |                   |             |  |
| 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. This is the range when programming Vboost or Vfloat by using SBP-001, the smart battery charging programmer.<br>4. Refer to derating curve.<br>5. This is MEAN WELL's suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation.<br>6. Derating may be needed under low input voltages. Please check the derating curve for more details.<br>7. The efficiency is measured at 16.8V charge voltage(12V model), 33.6V charge voltage(24V model), 67.2V charge voltage(48V model).<br>8. This protection mechanism is specified for the case the short circuit occurs after the charger is turned on.<br>9. Each model incorporates a MCU-controlled dynamic over voltage protection, which is about 115% of Vboost over Constant Current stage and Constant Voltage stage whereas 115% of Vfloat over Float stage.<br>10. 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." (as available on http://www.meanwell.com)<br>11. 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 https://www.meanwell.com/serviceDisclaimer.aspx |                                                                                                                                             |                                         |                                                                          |                   |             |  |

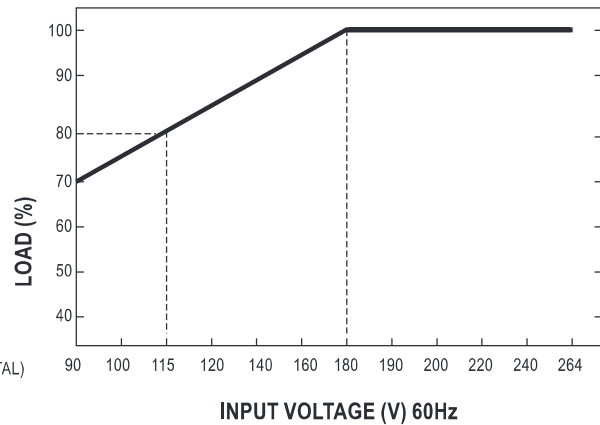
## Block Diagram



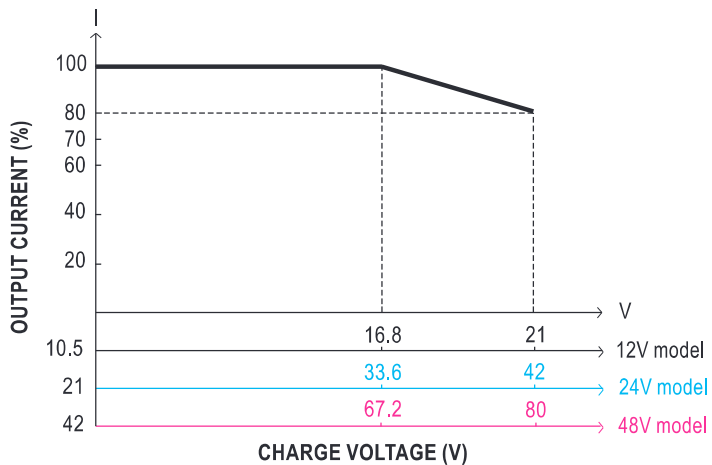
## Derating Curve



## Static Characteristics



## Derating Curve



◎ The rated current should change with the output voltage programming accordingly.

## Function Manual

### 1.Manual setting

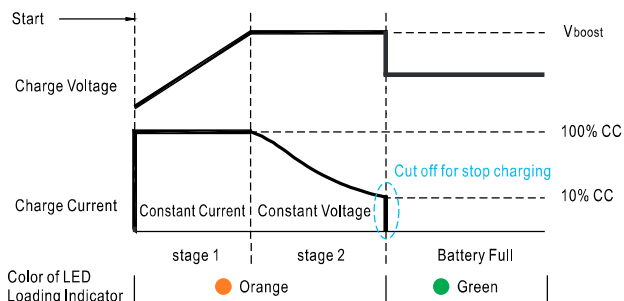


#### 1.1 2 or 3-stage selectable via DIP S.W on panel

| S.W NO. | Function                           | Description                                       |
|---------|------------------------------------|---------------------------------------------------|
| 1       | OFF: 3 stage(Default), ON: 2 stage | This series provides 2 or 3 stage charging curve  |
| 2       | Charging curve adjustable          | 4 built-in charging curves adjustable via DIP S.W |
| 3       |                                    |                                                   |

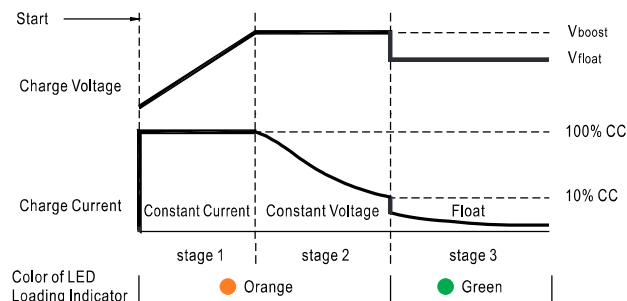
#### 1.2 Charging curve can be adjustable via DIP S.W on panel

##### ☉ 2 stage charging curve



| State            | NPB-1700-12 | NPB-1700-24 | NPB-1700-48 |
|------------------|-------------|-------------|-------------|
| Constant Current | 85A         | 50A         | 25A         |
| Vboost           | 14.4V       | 28.8V       | 57.6V       |

##### ☉ Default 3 stage charging curve



| State            | NPB-1700-12 | NPB-1700-24 | NPB-1700-48 |
|------------------|-------------|-------------|-------------|
| Constant Current | 85A         | 50A         | 25A         |
| Vboost           | 14.4V       | 28.8V       | 57.6V       |
| Vfloat           | 13.8V       | 27.6V       | 55.2V       |

☉ Suitable for lead-acid batteries (flooded, Gel and AGM) and Li-ion batteries (lithium iron and lithium manganese).

☉ Suitable for lead-acid batteries (flooded, Gel and AGM) and Li-ion batteries (lithium iron and lithium manganese).

※ The default curve is programmable, whereas other pre-defined curves can be activated by the means of the DIP S.W; please refer to the table below and the Mechanical Specification.

☉ Embedded **2 stage** charging curve

| DIP SW position |     | 12V model                       |             |        |
|-----------------|-----|---------------------------------|-------------|--------|
| 2               | 3   | Description                     | CC(default) | Vboost |
| OFF             | OFF | Default, programmable           | 85A         | 14.4   |
| ON              | OFF | Pre-defined, gel battery        |             | 14.0   |
| OFF             | ON  | Pre-defined, flooded battery    |             | 14.2   |
| ON              | ON  | Pre-defined, AGM battery,LiFe04 |             | 14.6   |
| DIP SW position |     | 24V model                       |             |        |
| 2               | 3   | Description                     | CC(default) | Vboost |
| OFF             | OFF | Default, programmable           | 50A         | 28.8   |
| ON              | OFF | Pre-defined, gel battery        |             | 28.0   |
| OFF             | ON  | Pre-defined, flooded battery    |             | 28.4   |
| ON              | ON  | Pre-defined, AGM battery,LiFe04 |             | 29.2   |
| DIP SW position |     | 48V model                       |             |        |
| 2               | 3   | Description                     | CC(default) | Vboost |
| OFF             | OFF | Default, programmable           | 25A         | 57.6   |
| ON              | OFF | Pre-defined, gel battery        |             | 56.0   |
| OFF             | ON  | Pre-defined, flooded battery    |             | 56.8   |
| ON              | ON  | Pre-defined, AGM battery,LiFe04 |             | 58.4   |

☉ Embedded **3 stage** charging curve

| DIP SW position |     | 12V model                       |             |        |        |
|-----------------|-----|---------------------------------|-------------|--------|--------|
| 2               | 3   | Description                     | CC(default) | Vboost | Vfloat |
| OFF             | OFF | Default, programmable           | 85A         | 14.4   | 13.8   |
| ON              | OFF | Pre-defined, gel battery        |             | 14.0   | 13.6   |
| OFF             | ON  | Pre-defined, flooded battery    |             | 14.2   | 13.4   |
| ON              | ON  | Pre-defined, AGM battery,LiFe04 |             | 14.6   | 14.0   |
| DIP SW position |     | 24V model                       |             |        |        |
| 2               | 3   | Description                     | CC(default) | Vboost | Vfloat |
| OFF             | OFF | Default, programmable           | 50A         | 28.8   | 27.6   |
| ON              | OFF | Pre-defined, gel battery        |             | 28.0   | 27.2   |
| OFF             | ON  | Pre-defined, flooded battery    |             | 28.4   | 26.8   |
| ON              | ON  | Pre-defined, AGM battery,LiFe04 |             | 29.2   | 28.0   |
| DIP SW position |     | 48V model                       |             |        |        |
| 2               | 3   | Description                     | CC(default) | Vboost | Vfloat |
| OFF             | OFF | Default, programmable           | 25A         | 57.6   | 55.2   |
| ON              | OFF | Pre-defined, gel battery        |             | 56.0   | 54.4   |
| OFF             | ON  | Pre-defined, flooded battery    |             | 56.8   | 53.6   |
| ON              | ON  | Pre-defined, AGM battery,LiFe04 |             | 58.4   | 56.0   |

## 2. Programmable charging curve

Charging Curve can be set via SBP-001 with computer

### Step 1

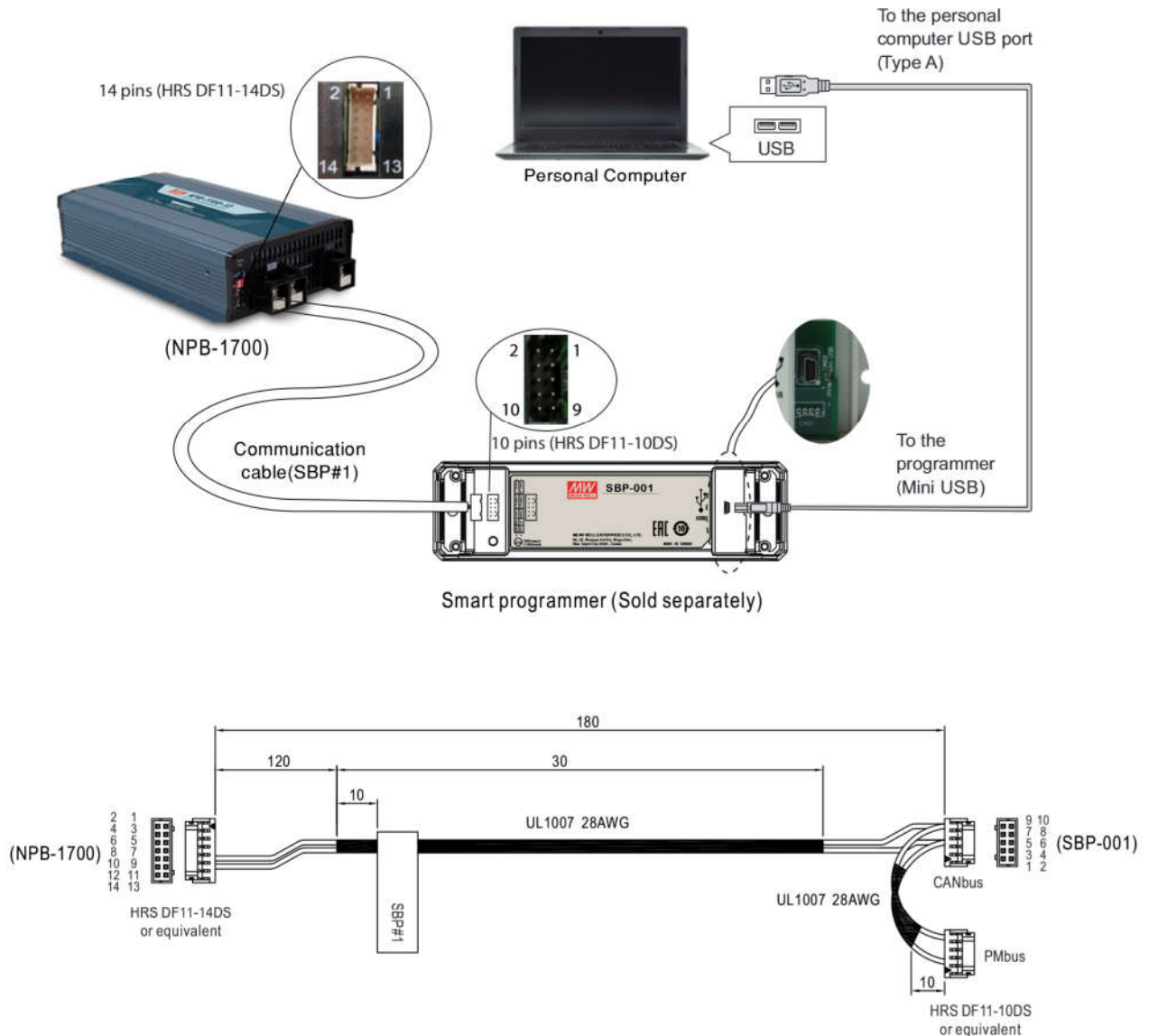
Hardware configuration

| Step | Action                                                                              | Note                                                                                  |
|------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1    | DIP S.W position 2 and 3 need to switch to "OFF" position                           |  |
| 2    | The pin7 and pin8(Jumper) of 14pins connector need to be removed when using SBP-001 |  |
| 3    | Communication cable of SBP#1 connected between NPB-1700 and personal computer       |  |



## Step 2

Connect to software for setting



### NPB-1700 pin assignment:

| Connector                                                       | Pin Assignment |    |       |     |              |            |               |         |         |      |      |            |            |    |
|-----------------------------------------------------------------|----------------|----|-------|-----|--------------|------------|---------------|---------|---------|------|------|------------|------------|----|
| NPB-1700 14pins connector<br>(Connector Part No.:HRS DF11-14DS) | 1              | 2  | 3     | 4   | 5            | 6          | 7             | 8       | 9       | 10   | 11   | 12         | 13         | 14 |
|                                                                 | A1             | A0 | +3.3V | GND | Battery Full | Charger OK | Remote ON-OFF | +12Vaux | GND-AUX | CANH | CANL | NTC (RTH+) | NTC (RTH-) |    |

### SBP-001 pin assignment:

| Connector                                                          | Pin Assignment |         |         |         |      |      |    |     |      |     |
|--------------------------------------------------------------------|----------------|---------|---------|---------|------|------|----|-----|------|-----|
| SBP-001<br>10 pins connector<br>(Connector Part No.:HRS DF11-10DS) | 1              | 2       | 3       | 4       | 5    | 6    | 7  | 8   | 9    | 10  |
|                                                                    | UART_RX        | UART_TX | PMBUS_D | PMBUS_C | CANH | CANL | 5V | GND | 3.3V | GND |

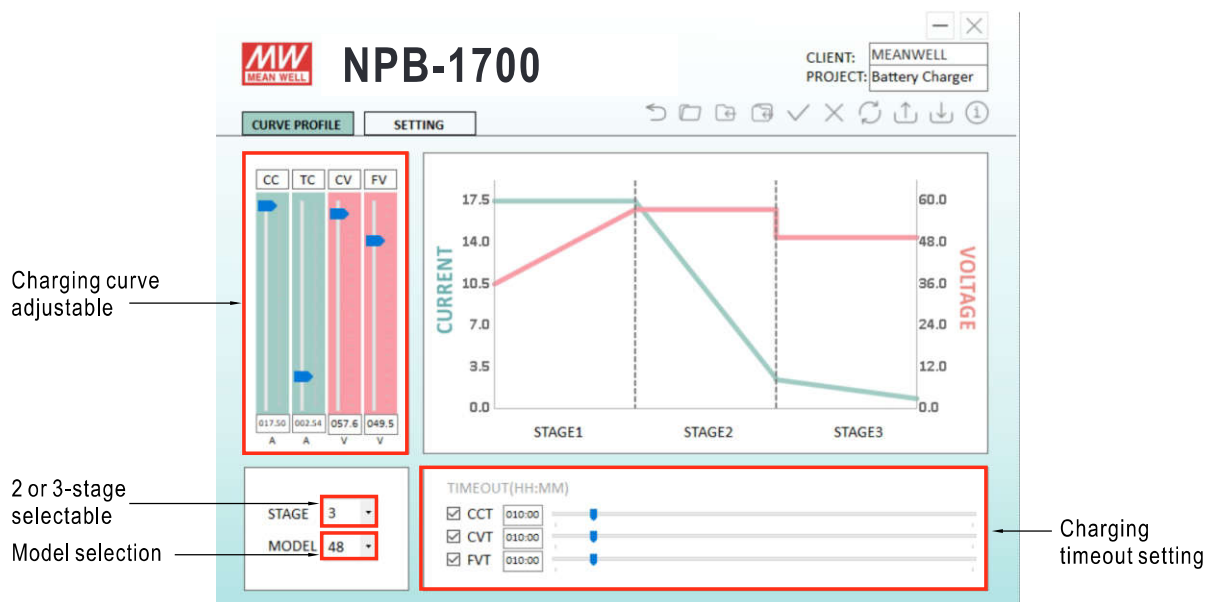
## ※ Function Description:

SBP-001 is a programmer, particularly for MEAN WELL's various programmable battery charger models to program the parameters of charging curves, such as the 2 or 3 stage selectable, Constant current (CC), taper current (TC), Constant voltage (CV), float voltage (FV), Charging time out and so on, to accommodate the diversified battery specification in industry. With the design accounting for simplicity and convenience, users can easily configure MEAN WELL's programmable battery chargers with SBP-001 programmer and the computer; all of the setups are able to be finished easily by the means of the specific software.

Note: (1) Taper current (TC) default is 10%, can be fine tuned from 2% to 30% by SBP-001 with computer or CANBus Interface.

(2) Please contact MEAN WELL for more details.

## ※ Software Interface:



## 3. Auto Ranging for Charging (Default non-Auto ranging)

### ※ Function Description:

a. NPB-1700 has built-in auto ranging mode.

(Note this mode is set to OFF by factory default and is suitable for lithium batteries with BMS only)

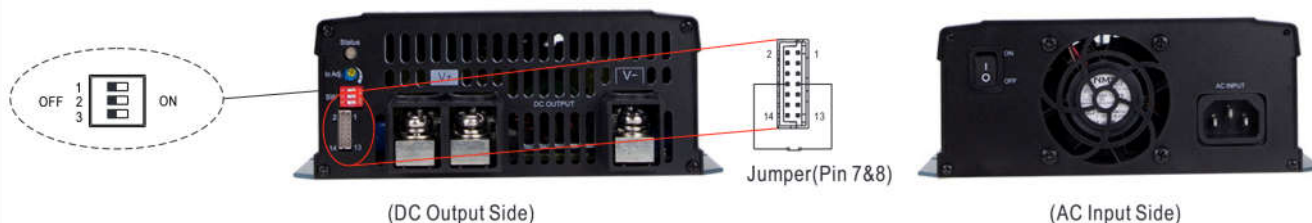
b. When operating in auto ranging mode, NPB-1700 will automatically detect the voltage of battery that is connected and adjust charging voltage accordingly. It will not start charging unit appropriate battery voltage is detected.

c. While under auto ranging mode, NPB-1700's built-in MCU will adjust charging voltage. There is no potentiometer for voltage adjustment on the front panel.

d. While under auto ranging mode, the charging current can be adjusted between 50~100%.

(The charging current can not be adjusted via potentiometer while not operating in auto ranging mode)

※ When using the auto ranging charging curve function, please pay attention to the following:



- (1) Default factory setting is OFF via DC output side DIP S.W, Follow steps A1~A6 below to enable the setting.
- (2) **Auto ranging function should use together with Lithium batteries and BMS** (Battery Management System).
- (3) Do not exceed the output voltage and current ranges as specified in the NPB-1700 specifications (please refer to page 2).

※ Auto Ranging function by DIP S.W Setting **(Please make sure that the battery is lithium battery and must be matched with BMS before using. Auto ranging function is prohibited for non-lithium battery)**

| Step | Action                                                                                                           | Note                                                                                                                                                                                                                                                                                                                                                                                   |
|------|------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A1   | Set DIP S.W all in the "OFF" position(Default).                                                                  |                                                                                                                                                                                                                                                                                                     |
| A2   | Applying AC main and swith on under remote OFF.                                                                  |                                                                                                                                                                                                                                                                                                   |
| A3   | Within 15 seconds , set DIP S.W, all in the "ON" position and all back in the "OFF" again.                       |                                                                                                                                                                                                                                                                                                   |
| A4   | The green LED flashes 3 times means the process is successfully done.                                            |                                                                                                                                                                                                                                                                                                   |
| A5   | Restart the NPB-1700 to load smart charging curve setting.<br>(AC input on/off or swith on/off on AC input side) | AC  INPUT → AC  INPUT<br>or<br> →  |
| A6   | Pin 7 & 8 put on jumper.                                                                                         |                                                                                                                                                                                                                                                                                                   |

※ Back to non-auto ranging as following:

| Step | Action                                                                                       | Note                                                                                  |
|------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| B1   | All DIP switch for charging curve setting are switch to ON position before applying AC main. |  |
| B2   | Applying AC main under remote OFF condition.                                                 |  |
| B3   | Switch the DIP switch from all ON to all OFF, and then again, back to all ON in 15 seconds.  |  |
| B4   | If LED flashes in GREEN for 3 times, it means the setting is succeeded.                      |  |
| B5   | Remote ON the unit, and it's now back to factory setting.                                    |  |

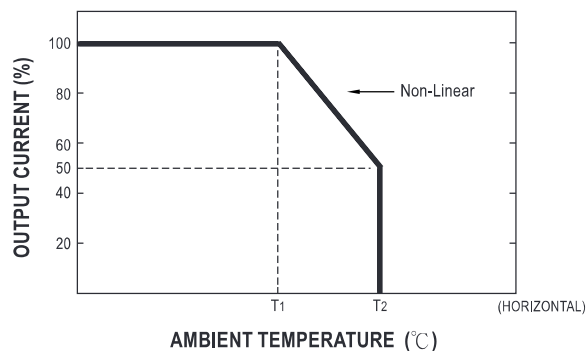


## 4.Auto Derating function

※ Covered by over temperature protection, auto de-rating function works under operation either in charging curve (2 or 3 stage) or under control by communication protocol(CANBus).

T<sub>1</sub>(Typ.): Maximum ambient temperature of 100% output current.

T<sub>2</sub>(Typ.): T<sub>1</sub>+5°C.



## 5.CANBus communication interface

CANBus 2.0B version, Can control, setting and monitoring that including output charging voltage, output charging current, internal temperature and DC output ON/OFF.....and so on, please refer to the [user manual](#) for more details.



### CANBus commend list

| Command Code | Command Name                                  | Transaction Type | # of data Bytes | Description                                            |
|--------------|-----------------------------------------------|------------------|-----------------|--------------------------------------------------------|
| 0x0000       | OPERATION                                     | R/W              | 1               | ON/OFF control                                         |
| 0x0020       | VOUT_SET                                      | R/W              | 2               | Output voltage setting<br>(format: value, F=0.01)      |
| 0x0030       | IOUT_SET                                      | R/W              | 2               | Output current setting<br>(format: value, F=0.01)      |
| 0x0040       | FAULT_STATUS                                  | R                | 2               | Abnormal status                                        |
| 0x0050       | READ_VIN<br>(NPB-450/750<br>Does not support) | R                | 2               | Input voltage read value<br>(format: value, F=0.1)     |
| 0x0060       | READ_VOUT                                     | R                | 2               | Output voltage read value<br>(format: value, F=0.01)   |
| 0x0061       | READ_IOUT                                     | R                | 2               | Output current read value<br>(format: value, F=0.01)   |
| 0x0062       | READ_TEMPERATURE_1                            | R                | 2               | Internal ambient temperature<br>(format: value, F=0.1) |
| 0x0080       | MFR_ID_B0B5                                   | R                | 6               | Manufacturer's name                                    |
| 0x0081       | MFR_ID_B6B11                                  | R                | 6               | Manufacturer's name                                    |

| Command Code | Command Name      | Transaction Type | # of data Bytes | Description                                                           |
|--------------|-------------------|------------------|-----------------|-----------------------------------------------------------------------|
| 0x0082       | MFR_MODEL_B0B5    | R                | 6               | Manufacturer's model name                                             |
| 0x0083       | MFR_MODEL_B6B11   | R                | 6               | Manufacturer's model name                                             |
| 0x0084       | MFR_REVISION_B0B5 | R                | 6               | Firmware revision                                                     |
| 0x0085       | MFR_LOCATION_B0B2 | R/W              | 3               | Manufacturer's factory location                                       |
| 0x0086       | MFR_DATE_B0B5     | R/W              | 6               | Manufacturer date                                                     |
| 0x0087       | MFR_SERIAL_B0B5   | R/W              | 6               | Product serial number                                                 |
| 0x0088       | MFR_SERIAL_B6B11  | R/W              | 6               | Product serial number                                                 |
| 0x00B0       | CURVE_CC          | R/W              | 2               | Constant current setting of charge curve (format: value, F=0.01)      |
| 0x00B1       | CURVE_CV          | R/W              | 2               | Constant voltage setting of charge curve (format: value, F=0.01)      |
| 0x00B2       | CURVE_FV          | R/W              | 2               | Floating voltage setting of charge curve (format: value, F=0.01)      |
| 0x00B3       | CURVE_TC          | R/W              | 2               | Taper current setting value of charging curve (format: value, F=0.01) |
| 0x00B4       | CURVE_CONFIG      | R/W              | 2               | Configuration setting of charge curve                                 |
| 0x00B5       | CURVE_CC_TIMEOUT  | R/W              | 2               | CC charge timeout setting of charging curve                           |
| 0x00B6       | CURVE_CV_TIMEOUT  | R/W              | 2               | CV charge timeout setting of charging curve                           |
| 0x00B7       | CURVE_FV_TIMEOUT  | R/W              | 2               | FV charge timeout setting of charging curve                           |
| 0x00B8       | CHG_STATUS        | R                | 2               | Charging status reporting                                             |
| 0x00C0       | SCALING_FACTOR    | R                | 2               | Scaling ratio                                                         |
| 0x00C1       | SYSTEM_STATUS     | R                | 2               | System status                                                         |
| 0x00C2       | SYSTEM_CONFIG     | R/W              | 2               | System configuration                                                  |

## 6.Charger OK Signal

Charger OK signal is a TTL level signal.

The maximum sourcing current is 10mA.

| Between Charger OK (pin 6) and GND-AUX (pin 9 & 10) | Charging Status                          |
|-----------------------------------------------------|------------------------------------------|
| "High" : 4.5 ~ 5.5V                                 | Work normally                            |
| "Low" : -0.5 ~ 0.5V                                 | Failure or protection function activated |

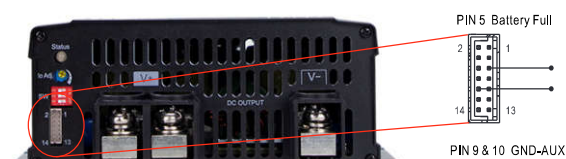


## 7. Battery Full Signal

Battery full signal is a TTL level signal.

The maximum sourcing current is 10mA.

| Between Battery Full (pin 5) and GND-AUX (pin 9 & 10) | Status       | LED indication |
|-------------------------------------------------------|--------------|----------------|
| "High" : 4.5 ~ 5.5V                                   | Battery Full | Green          |
| "Low" : -0.5 ~ 0.5V                                   | Charging     | Orange         |



## 8. Remote ON-OFF Control

The NPB-1700 can be turned ON/OFF by using the "Remote Control" function.

| Between Remote ON-OFF (pin 7) and +12Vaux (pin 8) | Status       |
|---------------------------------------------------|--------------|
| S.W Short (pin 7 = 10.8 ~ 13.2V)                  | ON (Default) |
| S.W Open (pin 7 = -0.5 ~ 0.5V)                    | OFF          |

※ The charger is shipped, by factory default, with Remote ON-OFF(pin 7) and +12Vaux (pin 8) shorted by connector.

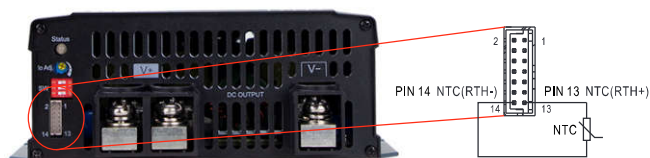


## 9. Temperature compensation(3 stage only)

Temperature compensation function to prolong battery life for lead-acid batteries. Temperature compensation range is 0 ~ 40°C .

The battery temperature sensor comes along with the charger can be connected to the unit to allow temperature compensation of the charging voltage.

If the sensor is not used, the charger works normally.



## 10. DC Output Side LED Indicators & Corresponding Signal at Function Pins

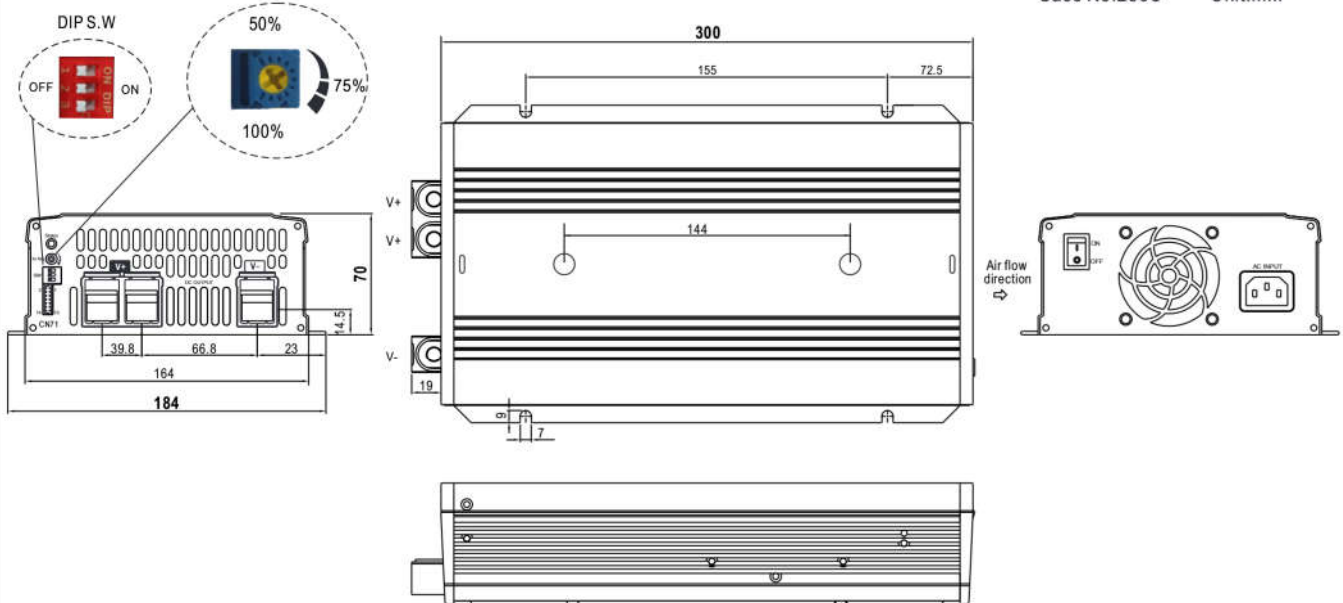
| LED                                                                                                   | Description                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  Green             | Float (stage 3) or Battery full                                                                                                                                                                                                                  |
|  Orange            | Charging (stage 1 or stage 2)                                                                                                                                                                                                                    |
|  Orange (Flashing) | Auto ranging for charging                                                                                                                                                                                                                        |
|  Red               | Abnormal status (OTP, OVP, Short circuit, Reverse polarity, Charging timeout.)                                                                                                                                                                   |
|  Red (Flashing)    | The LED will flash with the red light when the internal temperature reaches 95°C; under this condition, the unit still operates normally without entering OTP. (In the meantime, an alarm signal will be sent out through the CANBus interface.) |

## Mechanical Specification

### ※ Intelligent Battery Charger model

Case No.286C

Unit:mm



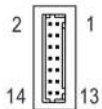
### ※ DIP S.W

|  | 1                           | 2   | 3   | Description                      |
|--|-----------------------------|-----|-----|----------------------------------|
|  | OFF: 3 stage<br>ON: 2 stage | OFF | OFF | Default, programmable            |
|  |                             | ON  | OFF | Pre-defined, Gel battery         |
|  |                             | OFF | ON  | Pre-defined, flooded battery     |
|  |                             | ON  | ON  | Pre-defined, AGM battery, LiFe04 |

### ※ LED Status Table

| LED Indicator | Status                                                         |
|---------------|----------------------------------------------------------------|
|               | Float stage (stage 3) or full charged                          |
|               | Charging (stage 1 or stage 2)                                  |
|               | Charging with auto ranging function                            |
|               | Abnormal (OTP, OVP, short circuit, reverse polarity, time out) |
|               | Unit over heated internally                                    |

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



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

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

| Pin No. | Assignment    | Mating Housing                 | Terminal                       |
|---------|---------------|--------------------------------|--------------------------------|
| 1       | A1            | HRS DF11-14DS<br>or equivalent | HRS DF11-14SC<br>or equivalent |
| 2       | A0            |                                |                                |
| 3       | +3.3V         |                                |                                |
| 4       | GND(Signal)   |                                |                                |
| 5       | Battery Full  |                                |                                |
| 6       | Charger OK    |                                |                                |
| 7       | Remote ON-OFF |                                |                                |
| 8       | +12Vaux       |                                |                                |
| 9,10    | GND-AUX       |                                |                                |
| 11      | CANH          |                                |                                |
| 12      | CANL          |                                |                                |
| 13      | NTC(RTH+)     |                                |                                |
| 14      | NTC(RTH-)     |                                |                                |

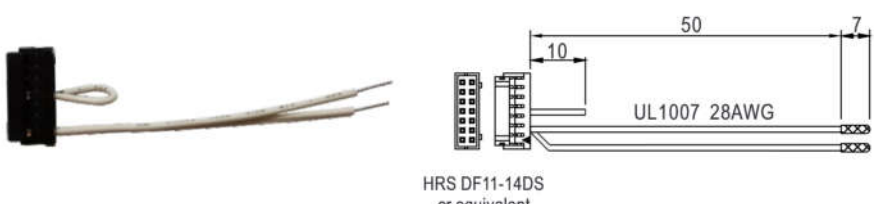
| Pin No. | Function      | Description                                                                                                                                                                                                                                                                                                    |
|---------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | A1            | CANBus interface address line(A1). Referenced to GND(Signal) Pin4.(Note.1)                                                                                                                                                                                                                                     |
| 2       | A0            | CANBus interface address line(A0). Referenced to GND(Signal) Pin4.(Note.1)                                                                                                                                                                                                                                     |
| 3       | +3.3V         | +3.3V voltage output, reference to GND(pin 4).                                                                                                                                                                                                                                                                 |
| 4       | GND(Signal)   | CANBus interface address lines GND.                                                                                                                                                                                                                                                                            |
| 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    | Charger 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       | +12Vaux       | It is controlled by the Remote ON-OFF control.                                                                                                                                                                                                                                                                 |
| 9,10    | GND-AUX       | The signal return is isolated from the output terminal. (+V & -V)                                                                                                                                                                                                                                              |
| 11      | CANH          | For CANBus model: Data line used in CANBus interface. (Note.2).                                                                                                                                                                                                                                                |
| 12      | CANL          | For CANBus model: Data line used in CANBus interface. (Note.2).                                                                                                                                                                                                                                                |
| 13      | NTC(RTH+)     | Temperature sensor(NTC, 5KOhm) comes along with the charger can be connected to the unit to allow temperature                                                                                                                                                                                                  |
| 14      | NTC(RTH-)     | compensation of the charging voltage for lead-acid batteries. Temperature compensation range is 0 ~ 40°C(3 stage only).                                                                                                                                                                                        |

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

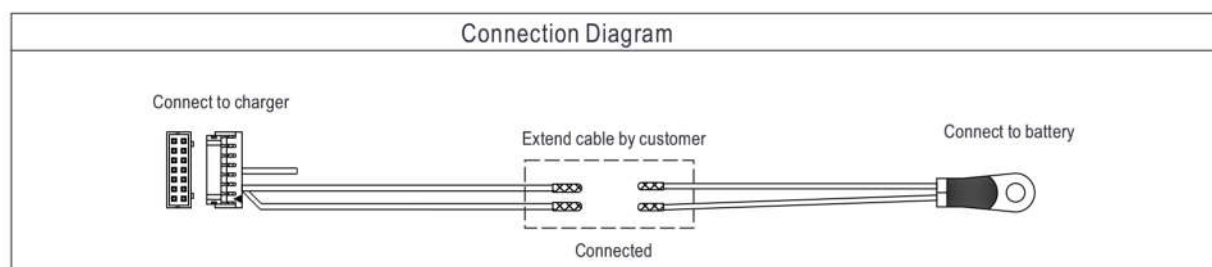
Note2: Isolated signal, referenced to GND-AUX

## ■ Accessory List

※ NTC Sensor and Remote Control mating along with NPB-1700 (Standard accessory)

| Item |                                                                                                                        | Quantity |
|------|------------------------------------------------------------------------------------------------------------------------|----------|
| 1    | <p>NTC sensor wire</p>             | 1        |
| 2    | <p>Remote control mating wire</p>  | 1        |

## Connection Diagram

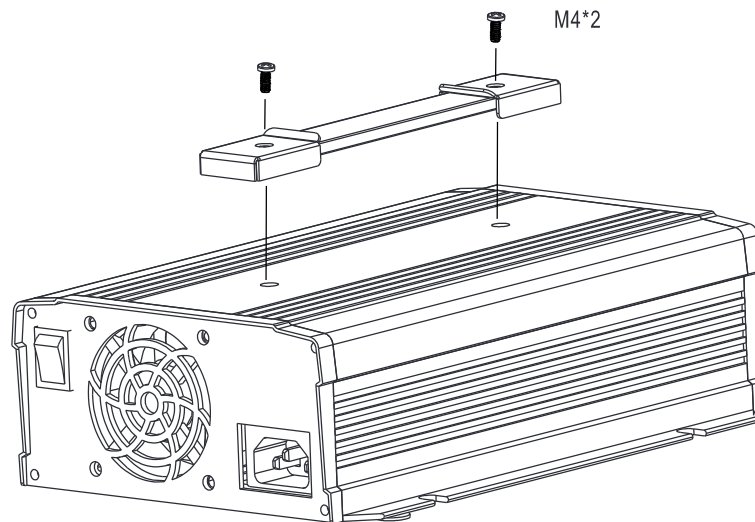




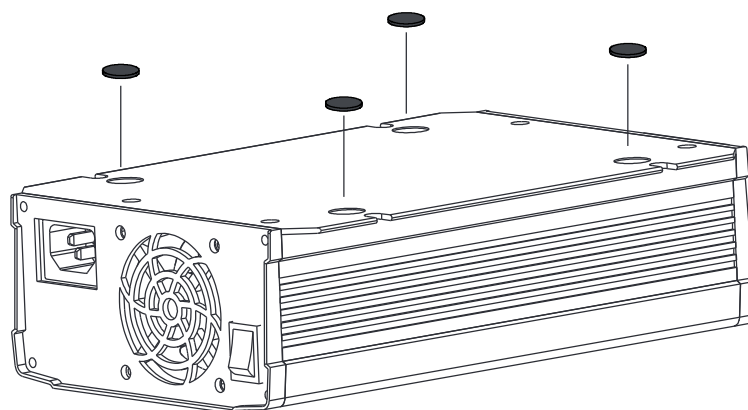
※ Carry handle (Optional accessory, battery charger and pull handle should be ordered seperately)

| 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>