



AC input side



DC output side



UL62368-1



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



IEC62368-1  
IEC60335-1/2-29



TPTC004



## Features

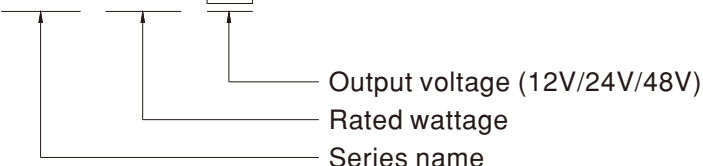
- Multi-function single unit battery charger or power supply operation modes selectable
- Output voltage and current adjustable via potentiometer
- 3-stage charging curve for charging mode
- -30~+70°C wide operating temperature
- Multiple protections: Short circuit / Over load / Over voltage / Over temperature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

## Description

NPP-750 is a miniaturized dual-purpose charger and power supply. In addition to being used as a three-stage charger for lead-acid batteries, it can also be used as a constant voltage output power supply to drive general load. The operating mode can be quickly switched by plugging or unplugging a connector on the front panel. Other features include: ultra-wide voltage output, adjustable voltage via VR on the panel (10.5~21V, 21~42V, 42~80V), adjustable charging current (50~100%), built-in intelligent fan with variable speed based on temperature to reduce noise and extend fan lifetime, -30~+70° C wide operating temperature, suitability for use in different environments, built-in remote ON/OFF control, compliance to IEC/EN/UL62368-1 and household EN60335-1/-2-29 dual safety, multiple built-in protections, and 3-year warranty. The NPP-750 is truly an intelligent, safe, and reliable universal dual-purpose charger and power supply with outstanding cost performance.

## Model Encoding

**NPP - 750 - 24**



## Applications

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

## GTIN CODE

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

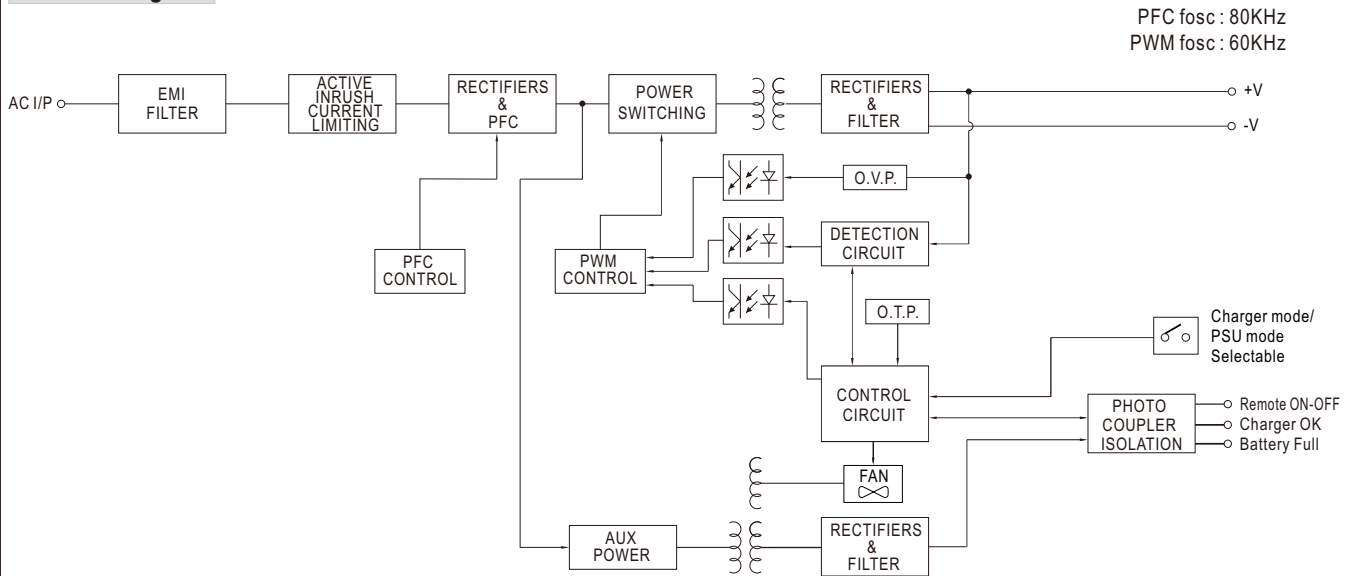
**SPECIFICATION for Battery Charger mode (Default)**

| MODEL                          | NPP-750-12   | NPP-750-24   | NPP-750-48                                      |   |
|--------------------------------|--|--|---|---|
| OUTPUT                         | BOOST CHARGE VOLTAGE(Vboost)(default)  | 14.4V  | 28.8V   | 57.6V                                   |
|                                | FLOAT CHARGE VOLTAGE(Vfloat)(default)  | 13.8V  | 27.6V   | 55.2V                                   |
|                                | VOLTAGE ADJUSTABLE RANGE   | 10.5 ~ 21V   | 21 ~ 42V  | 42 ~ 80V                                |
|                                |  | By built-in potentiometer  |   |   |
|                                | MAX. OUTPUT CURRENT(CC)  | 43A  | 22.5A   | 11.3A                                   |
|                                | CURRENT ADJUSTABLE RANGE   | 21.5 ~ 43A   | 11.25 ~ 22.5A                                   | 5.65 ~ 11.3A                            |
|                                |  | By built-in potentiometer  |   |   |
|                                | MAX. POWER   | 722.4W   | 756W  | 759.36W                                 |
|                                | RECOMMENDED BATTERY CAPACITY (AMP HOURS) Note.4  | 150 ~ 500AH  | 80 ~ 260AH                                      | 40 ~ 130AH                              |
| INPUT                          | VOLTAGE RANGE Note.5   | 90 ~ 264VAC 127 ~ 370VDC   |   |   |
|                                | FREQUENCY RANGE  | 47 ~ 63Hz  |   |   |
|                                | POWER FACTOR (Typ.)  | PF>0.98/115VAC, PF>0.95/230VAC at full load  |   |   |
|                                | EFFICIENCY (Typ.) Note.6   | 92%  | 93%   | 93%                                     |
|                                | AC CURRENT (Typ.)  | 8.7A/115VAC  | 4A/230VAC                                       |   |
|                                | INRUSH CURRENT (Typ.)  | COLD START 50A at 230VAC   |   |   |
| PROTECTION                     | SHORT CIRCUIT Note.7   | Protection type : Constant current limiting, charger will shutdown after 5 sec, re-power on to recover         |   |   |
|                                | OVER VOLTAGE   | 21.5 ~ 26V   | 43 ~ 52V  | 82 ~ 100V                               |
|                                | OVER TEMPERATURE   | Shut down O/P voltage, recovers automatically after temperature goes down                                      |   |   |
| FUNCTION                       | CHARGING STAGE   | 3 stage only   |   |   |
|                                | CHARGER OK SIGNAL  | The TTL signal out, Charger OK = H(4.5 ~ 5.5V) ; Charger failure or protection status = L(-0.5 ~ +0.5V)        |   |   |
|                                | BATTERY FULL SIGNAL  | The TTL signal out, Battery full = H(4.5 ~ 5.5V) ; Charging = L(-0.5 ~ +0.5V)                                  |   |   |
|                                | REMOTE CONTROL   | Open : Charger stop charging Short : Charger normal work   |   |   |
|                                | FAN ON/OFF CONTROL   | Depends on internal temperature  |   |   |
| ENVIRONMENT                    | WORKING TEMP.  | -30 ~ +70°C (Refer to "Derating Curve")  |   |   |
|                                | WORKING HUMIDITY   | 20 ~ 95% RH non-condensing   |   |   |
|                                | STORAGE TEMP., HUMIDITY  | -40 ~ +85°C, 10 ~ 95% RH non-condensing  |   |   |
|                                | TEMP. COEFFICIENT  | ±0.05%/°C (0 ~ 50°C)   |   |   |
|                                | VIBRATION  | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes   |   |   |
| SAFETY & EMC (Note 8)          | SAFETY STANDARDS   | CB IEC62368-1, IEC60335-1/2-29, Dekra BS EN/EN62368-1, BS EN/EN60335-1/2-29, UL62368-1, EAC TP TC 004 approved |   |   |
|                                | WITHSTAND VOLTAGE  | I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC  |   |   |
|                                | ISOLATION RESISTANCE   | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 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 B                                 |
|                                |  | 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   | 883.5K hrs min. Telcordia SR-332 (Bellcore) ; 95.7K hrs min. MIL-HDBK-217F (25°C)                              |   |   |
|                                | DIMENSION  | 230*158*67mm (L*W*H)   |   |   |
|                                | PACKING  | 1.84Kg; 4pcs/ 9Kg / 1.63CUFT   |   |   |
| NOTE                           | <p>1. Modification for charger specification may be required for different battery specification. Please contact battery vendor and MEAN WELL for details.</p> <p>2. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>3. Float charge voltage(Vfloat) adjustable via potentiometer in battery charger mode.</p> <p>4. This is MEAN WELL's suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation.</p> <p>5. Derating may be needed under low input voltages. Please check the derating curve for more details.</p> <p>6. The efficiency is measured at 16.8V charge voltage(12V model), 33.6V charge voltage(24V model), 67.2V charge voltage(48V model).</p> <p>7. This protection mechanism is specified for the case the short circuit occurs after the charger is turned on.</p> <p>8. The charger is considered a component which will be installed into a final equipment. All the radiation tests require an additional 13*26*30 NIZN magnetic clasp or magnetic ring to the output line for CLASS B and without NIZN magnetic clasp or magnetic ring for CLASS A. 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 <a href="http://www.meanwell.com">http://www.meanwell.com</a>)</p> <p>9. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a></p> |  |   |   |

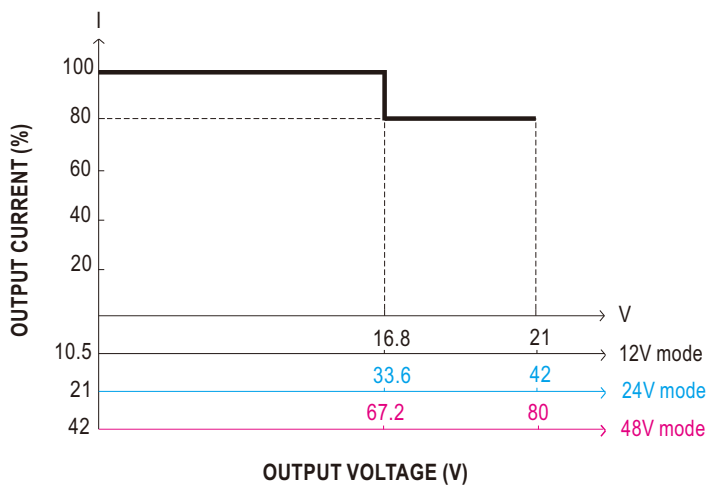
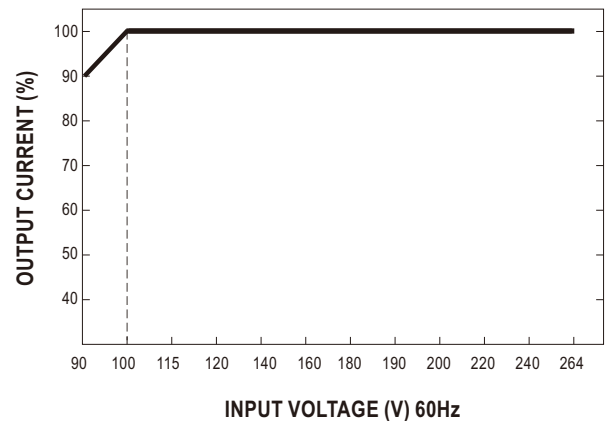
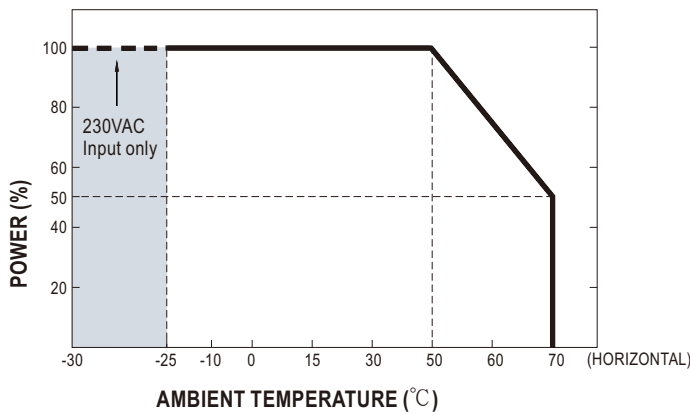
**SPECIFICATION for Power Supply mode (Selectable via pin3 & 4 jumper of 14pins connector on panel)**

| MODEL                          |  | NPP-750-12   | NPP-750-24                               | NPP-750-48                                      |  |
|--------------------------------|--|--|--|---|--|
| OUTPUT                         | DC VOLTAGE   | 14.4V  | 28.8V                                    | 57.6V   |  |
|                                | VOLTAGE ADJUSTABLE RANGE   | 10.5 ~ 21V   | 21 ~ 42V                                 | 42 ~ 80V  |  |
|                                |  | By built-in potentiometer  |  |   |  |
|                                | CURRENT ADJUSTABLE RANGE   | 21.5 ~ 43A   | 11.25 ~ 22.5A                            | 5.65 ~ 11.3A                                    |  |
|                                | RATED CURRENT  | 43A  | 22.5A                                    | 11.3A   |  |
|                                | RATED POWER  | 722.4W   | 756W                                     | 759.36W   |  |
|                                | RIPPLE & NOISE(max.)   | 180mVp-p   | 300mVp-p                                 | 480mVp-p  |  |
|                                | VOLTAGE TOLERANCE  | ±1.0%  | ±1.0%                                    | ±1.0%   |  |
|                                | LINE REGULATION  | ±0.5%  | ±0.5%                                    | ±0.5%   |  |
|                                | LOAD REGULATION  | ±1.0%  | ±1.0%                                    | ±0.5%   |  |
| SETUP, RISE TIME               | 1800ms, 60ms/230VAC at full load   |  |  |   |  |
| HOLD UP TIME (Typ.)            | 16ms/230VAC at 75% load 10ms/230VAC at full load   |  |  |   |  |
| INPUT                          | VOLTAGE RANGE <small>Note.3</small>  | 90 ~ 264VAC 127 ~ 370VDC   |  |   |  |
|                                | FREQUENCY RANGE  | 47 ~ 63Hz  |  |   |  |
|                                | POWER FACTOR (Typ.)  | PF>0.98/115VAC, PF>0.95/230VAC at full load  |  |   |  |
|                                | EFFICIENCY (Typ.)  | 92%  | 93%                                      | 93%   |  |
|                                | AC CURRENT (Typ.)  | 8.7A/115VAC 4A/230VAC  |  |   |  |
|                                | INRUSH CURRENT (Typ.)  | COLD START 50A at 230VAC   |  |   |  |
| PROTECTION                     | OVERLOAD   | 105 ~ 115% rated output power<br>Protection type : Constant current limiting, unit will shutdown after 5 sec, re-power on to recover |  |   |  |
|                                | SHORT CIRCUIT  | Protection type : Constant current limiting, unit will shutdown after 5 sec, re-power on to recover                                  |  |   |  |
|                                | OVER VOLTAGE   | 21.5 ~ 26V   | 43 ~ 52V                                 | 82 ~ 100V                                       |  |
|                                | OVER TEMPERATURE   | Shut down O/P voltage, recovers automatically after temperature goes down  |  |   |  |
| FUNCTION                       | REMOTE CONTROL   | Open : Power OFF Short : Power ON  |  |   |  |
|                                | DC OK  | The TTL signal out, DC OK = H(4.5 ~ 5.5V) ; Power supply failure or protection = L(-0.5 ~ +0.5V)                                     |  |   |  |
|                                | FAN SPEED CONTROL  | Depends on internal temperature  |  |   |  |
| ENVIRONMENT                    | WORKING TEMP.  | -30 ~ +70°C (Refer to "Derating Curve")  |  |   |  |
|                                | WORKING HUMIDITY   | 20 ~ 95% RH non-condensing   |  |   |  |
|                                | STORAGE TEMP., HUMIDITY  | -40 ~ +85°C, 10 ~ 95% RH non-condensing  |  |   |  |
|                                | TEMP. COEFFICIENT  | ±0.05%/°C (0 ~ 50°C)   |  |   |  |
|                                | VIBRATION  | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes   |  |   |  |
| SAFETY & EMC (Note 4)          | SAFETY STANDARDS   | CB IEC62368-1, IEC60335-1/2-29, Dekra BS EN/EN62368-1, BS EN/EN60335-1/2-29, UL62368-1, EAC TP TC 004 approved                       |  |   |  |
|                                | WITHSTAND VOLTAGE  | I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC  |  |   |  |
|                                | ISOLATION RESISTANCE   | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C / 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 B   |  |
|                                |  | 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   | 883.5K hrs min. Telcordia SR-332 (Bellcore); 95.7K hrs min. MIL-HDBK-217F (25°C)   |  |   |  |
|                                | DIMENSION  | 230*158*67mm (L*W*H)   |  |   |  |
|                                | PACKING  | 1.84Kg; 4pcs/ 9Kg / 1.63CUFT   |  |   |  |
| NOTE                           | <p>1. Modification for charger specification may be required for different battery specification. Please contact battery vendor and MEAN WELL for details.</p> <p>2. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>3. Derating may be needed under low input voltages. Please check the derating curve for more details.</p> <p>4. The PSU is considered a component which will be installed into a final equipment. All the radiation tests require an additional 13*26*30 NIZN magnetic clasp or magnetic ring to the output line for CLASS B and without NIZN magnetic clasp or magnetic ring for CLASS A. 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 <a href="http://www.meanwell.com">http://www.meanwell.com</a>)</p> <p>5. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a></p> |  |  |   |  |

## Block Diagram



## Derating Curve

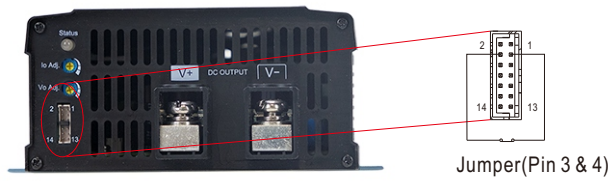


© The rated current change with the output voltage .

■ **Function Manual**

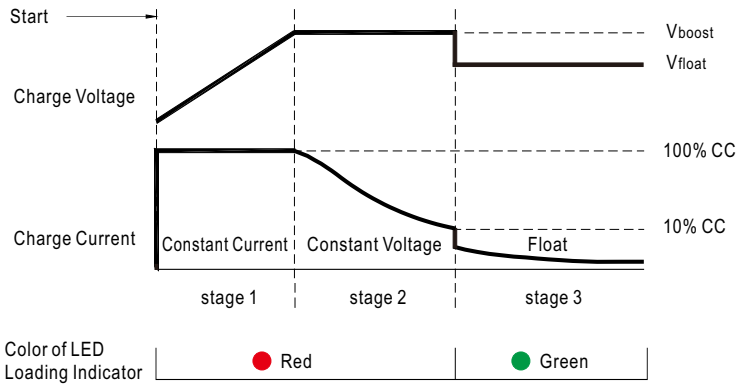
1. Battery Charger or Power Supply Operation modes selectable via pin3 and pin4 jumper

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



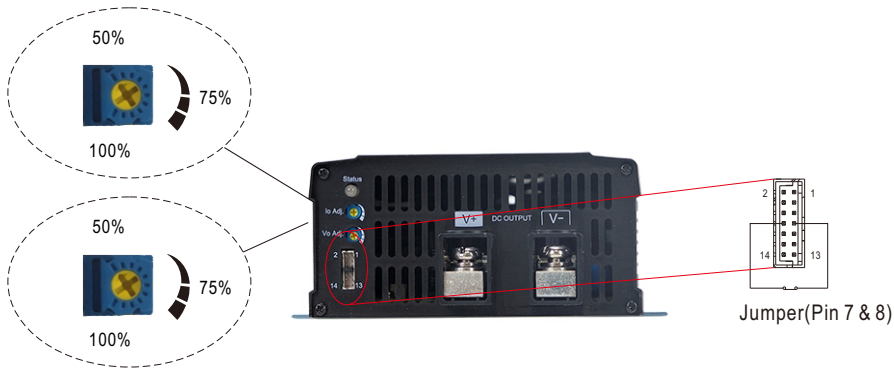
2. Charging Curve (Charging Mode)

© 3 stage charging curve



| State            | NPP-750-12 | NPP-750-24 | NPP-750-48 |
|------------------|------------|------------|------------|
| Constant Current | 43A        | 22.5A      | 11.3A      |
| Vboost           | 14.4V      | 28.8V      | 57.6V      |
| Vfloat           | 13.8V      | 27.6V      | 55.2V      |

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



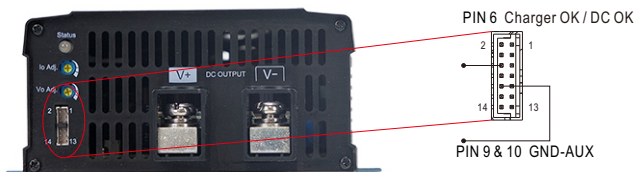
※  $V_o \times I_o$  must be less than or equal to the rated power. Please refer to derating curve (page 4) .

### 3.Charger OK / DC OK Signal

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

The maximum sourcing current is 10mA.

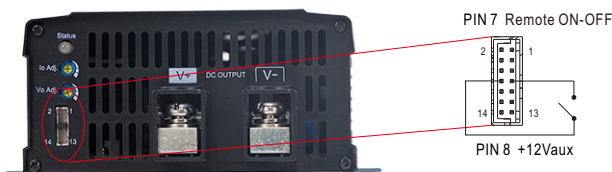
| Charger OK / DC OK signal | Charger status                           |
|---------------------------|--|
| "High" : 4.5 ~ 5.5V       | Work normally                            |
| "Low" : -0.5 ~ 0.5V       | Failure or protection function activated |



### 4.Remote ON-OFF Control

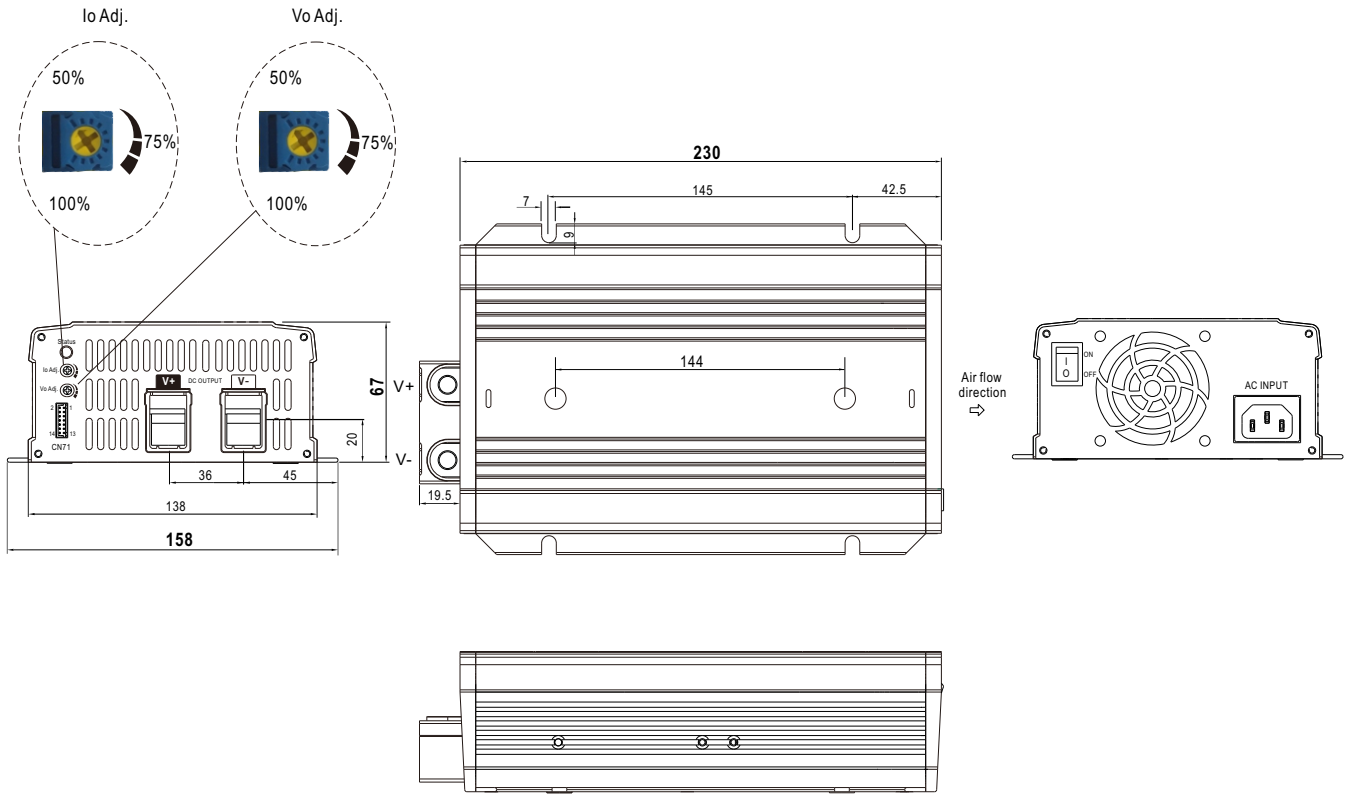
The NPP-750 can be turned ON/OFF by using the "Remote Control" function.

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



## Mechanical Specification

Case No.285A Unit:mm



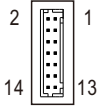
※ Connector Pin No. Assignment : HRS DF11-14DP-2DS or equivalent

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

※ LED Status Table

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

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



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

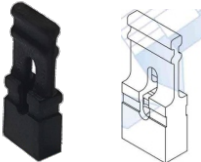
| Pin No.   | Function                       | Description  |
|-----------|--------------------------------|--|
| 1,2,11~14 | NC                             | -----  |
| 3,4       | Battery charger / Power supply | Open: Battery charger, Color of LED loading indicator: Reference to battery charger.<br>Short: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

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

Note2: Isolated signal, referenced to GND-AUX




**■ Accessory List**

※ Battery Charger or Power Supply mode of pin 3 and pin 4 mating pin along with NPP-750 (Standard accessory)

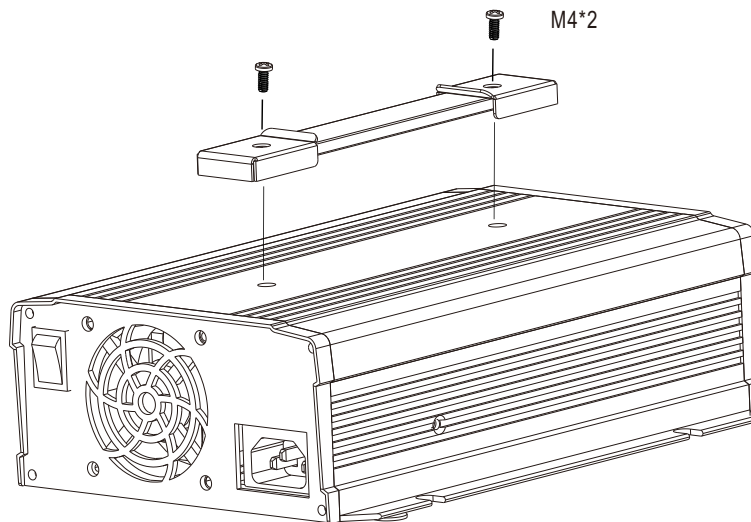
| Pin 3 and Pin 4 mating pin  | Quantity |
|---|----------|
| <br>1FF1HMJ20-020-95BS or equivalent | 1        |



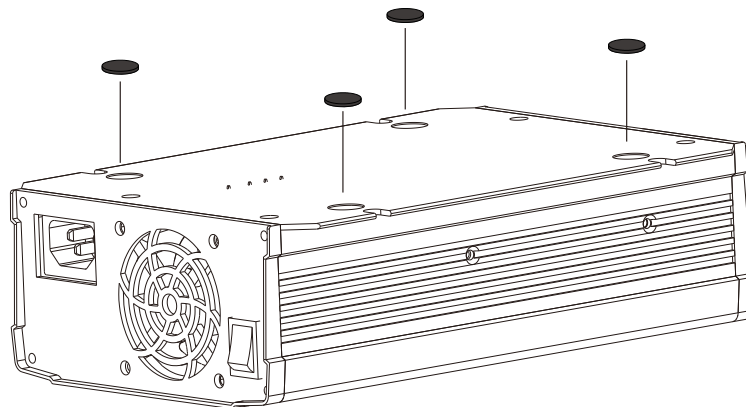
※ Carry handle (Optional accessory, battery charger and pull handle should be ordered seperately)

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

① Handle



② Foot pad



**■ INSTALLATION MANUAL**

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

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