



1700W High Reliable Ultra Wide Output Range Battery Charger & Power Supply 2-in-1 **NPP-1700 series**



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

- Mult-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-1700 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-1700 is truly an intelligent, safe, and reliable universal dual-purpose charger and power supply with outstanding cost performance.

■ Model Encoding

NPP - 1700 - 24

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

■ Applications

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



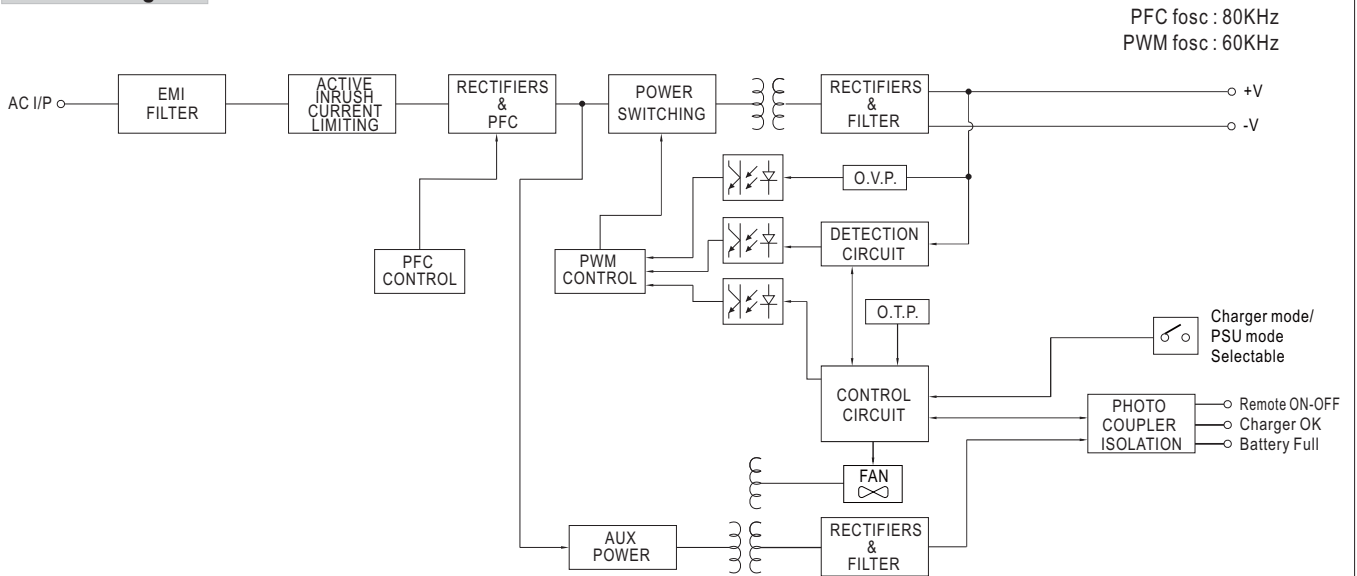
SPECIFICATION for Battery Charger mode (Default)

| MODEL | NPP-1700-12 | NPP-1700-24 | NPP-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 |
| | VOLTAGE ADJUSTABLE RANGE | 10.5 ~ 21V | 21 ~ 42V | 42 ~ 80V |
| | | By built-in potentiometer | | |
| | MAX. OUTPUT CURRENT(CC) | 85A | 50A | 25A |
| | CURRENT ADJUSTABLE RANGE | 42.5 ~ 85A | 25 ~ 50A | 12.5 ~ 25A |
| | | Note.3 By built-in potentiometer | | |
| MAX. POWER | 1428W | 1680W | 1680W | |
| RECOMMENDED BATTERY CAPACITY (AMP HOURS) Note.4 | 300 ~ 1000AH | 200 ~ 640AH | 100 ~ 330AH | |
| INPUT | VOLTAGE RANGE Note.5 | 90 ~ 264VAC 127 ~ 370VDC | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | |
| | POWER FACTOR (Typ.) | PF>0.98/115VAC, PF>0.95/230VAC at full load | | |
| | EFFICIENCY (Typ.) Note.6 | 92% | 93% | 94% |
| | AC CURRENT (Typ.) | 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 Note.7 | Protection type : Constant current limiting, charger will shutdown after 5 sec, re-power on to recover | | |
| | OVER VOLTAGE | 21.5 ~ 26V | 43 ~ 52V | 82 ~ 100V |
| | | Protection type : Shut down and latch off o/p voltage, re-power on to recover | | |
| OVER TEMPERATURE | Shut down O/P voltage, recovers automatically after temperature goes down | | | |
| FUNCTION | CHARGING STAGE | 3 stage only | | |
| | CHARGER OK SIGNAL | The TTL signal out, Charger OK = H(4.5 ~ 5.5V) ; Charger failure or protection status = L(-0.5 ~ +0.5V) | | |
| | BATTERY FULL SIGNAL | The TTL signal out, Battery full = H(4.5 ~ 5.5V) ; Charging = L(-0.5 ~ +0.5V) | | |
| | REMOTE CONTROL | Open : Charger stop charging Short : Charger normal work | | |
| | FAN ON/OFF CONTROL | Depends on internal temperature | | |
| ENVIRONMENT | WORKING TEMP. | -30 ~ +70°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 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 | 192.5K hrs min. Telcordia SR-332 (Bellcore); 58.5K hrs min. MIL-HDBK-217F (25°C) | | |
| | DIMENSION | 300*184*70mm (L*W*H) | | |
| | PACKING | 2.96Kg; 4pcs/ 14Kg / 2.58CUFT | | |
| 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 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)</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 https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | |

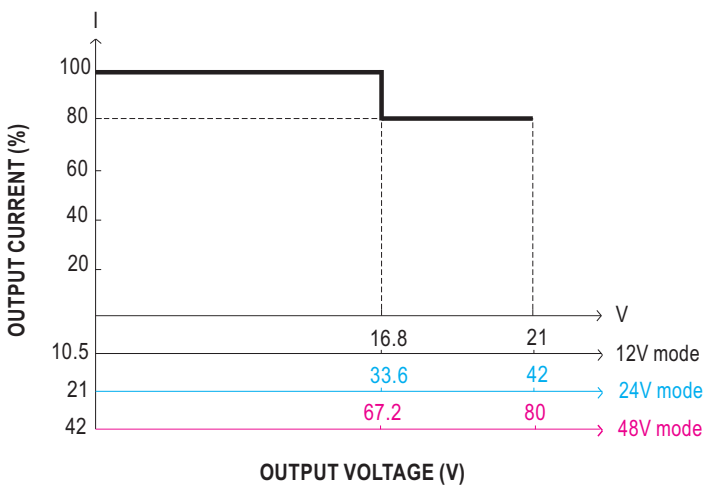
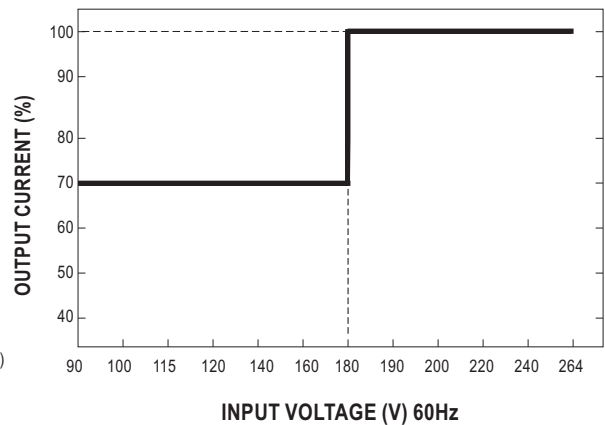
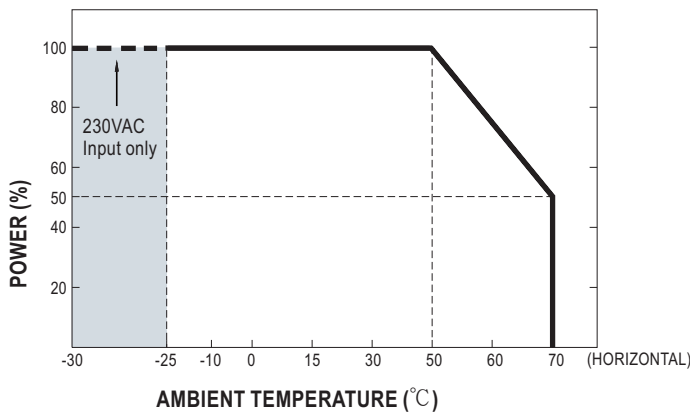
SPECIFICATION for Power Supply mode (Selectable via pin3 & 4 jumper of 14pins connector on panel)

| MODEL | NPP-1700-12 | | NPP-1700-24 | | NPP-1700-48 | | | |
|--------------------------------|--|--|--|----------|--|------------|---|--|
| 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 | 42.5 ~ 85A | | 25 ~ 50A | | 12.5 ~ 25A | | |
| | RATED CURRENT | 85A | | 50A | | 25A | | |
| | RATED POWER | 1428W | | 1680W | | 1680W | | |
| | RIPPLE & NOISE(max.) | 180mVp-p | | 300mVp-p | | 480mVp-p | | |
| | VOLTAGE TOLERANCE | ±2.0% | | ±1.0% | | ±1.0% | | |
| | LINE REGULATION | ±0.5% | | ±0.5% | | ±0.5% | | |
| | LOAD REGULATION | ±2.0% | | ±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% | | 94% | | |
| | AC CURRENT (Typ.) | 14.8A/115VAC 9.3A/230VAC | | | | | | |
| | INRUSH CURRENT (Typ.) | COLD START 50A at 230VAC | | | | | | |
| | LEAKAGE CURRENT | <0.75mA/240VAC | | | | | | |
| PROTECTION | OVERLOAD | 105 ~ 115% rated output power Protection type : Constant current limiting, unit will shutdown after 5 sec, re-power on to recover | | | | | | |
| | SHORT CIRCUIT | Protection type : Constant current limiting, unit will shutdown after 5 sec, re-power on to recover | | | | | | |
| | OVER VOLTAGE | 21.5 ~ 26V | | 43 ~ 52V | | 82 ~ 100V | | |
| | | Protection type : Shut down and latch off o/p voltage, re-power on to recover | | | | | | |
| | OVER TEMPERATURE | Shut down O/P voltage, recovers automatically after temperature goes down | | | | | | |
| FUNCTION | REMOTE CONTROL | Open : Power OFF Short : Power ON | | | | | | |
| | DC OK | The TTL signal out, DC OK = H(4.5 ~ 5.5V) ; Power supply failure or protection = L(-0.5 ~ +0.5V) | | | | | | |
| | FAN SPEED CONTROL | Depends on internal temperature | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -30 ~ +70°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./1 cycle, 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 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 | 192.5K hrs min. Telcordia SR-332 (Bellcore) ; 58.5K hrs min. MIL-HDBK-217F (25°C) | | | | | | |
| | DIMENSION | 300*184*70mm (L*W*H) | | | | | | |
| | PACKING | 2.96Kg; 4pcs/ 14Kg / 2.58CUFT | | | | | | |
| 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 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)</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 https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | | | | |

■ **Block Diagram**



■ **Derating Curve**

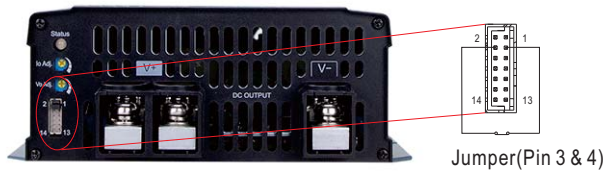


© The rated current change with the output voltage .

■ **Function Manual**

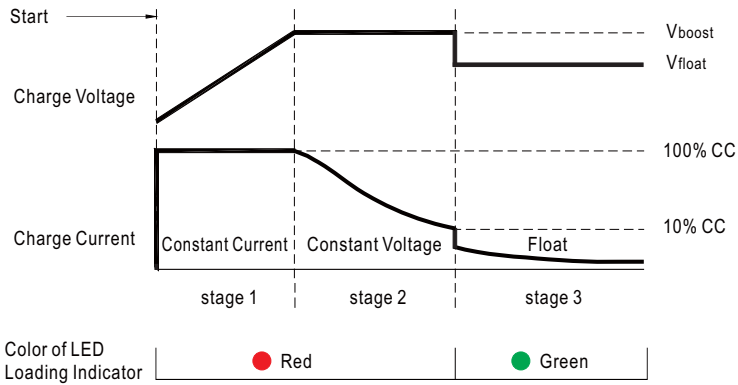
1. Battery Charger or Power Supply Operation modes selectable via pin3 and pin4 jumper

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



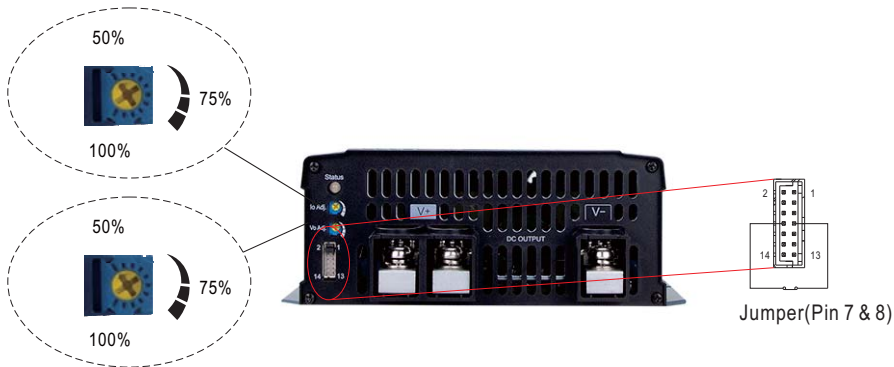
2. Charging Curve (Charging Mode)

© 3 stage charging curve



| State | NPP-1700-12 | NPP-1700-24 | NPP-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)



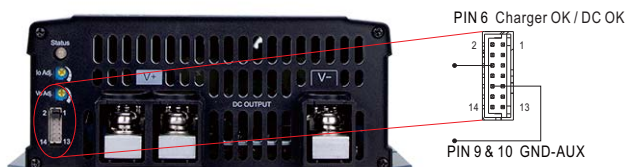
※ $V_o \times I_o$ must be less than or equal to the rated power. Please refer to derating curve (page 4) .

3.Charger OK / DC OK Signal

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

The maximum sourcing current is 10mA.

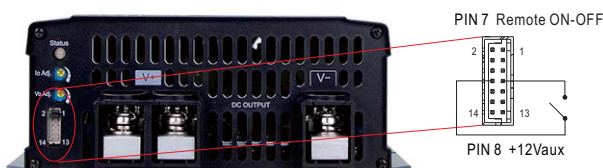
| Charger OK / DC OK signal | Charger status |
|---------------------------|--|
| "High" : 4.5 ~ 5.5V | Work normally |
| "Low" : -0.5 ~ 0.5V | Failure or protection function activated |



4.Remote ON-OFF Control

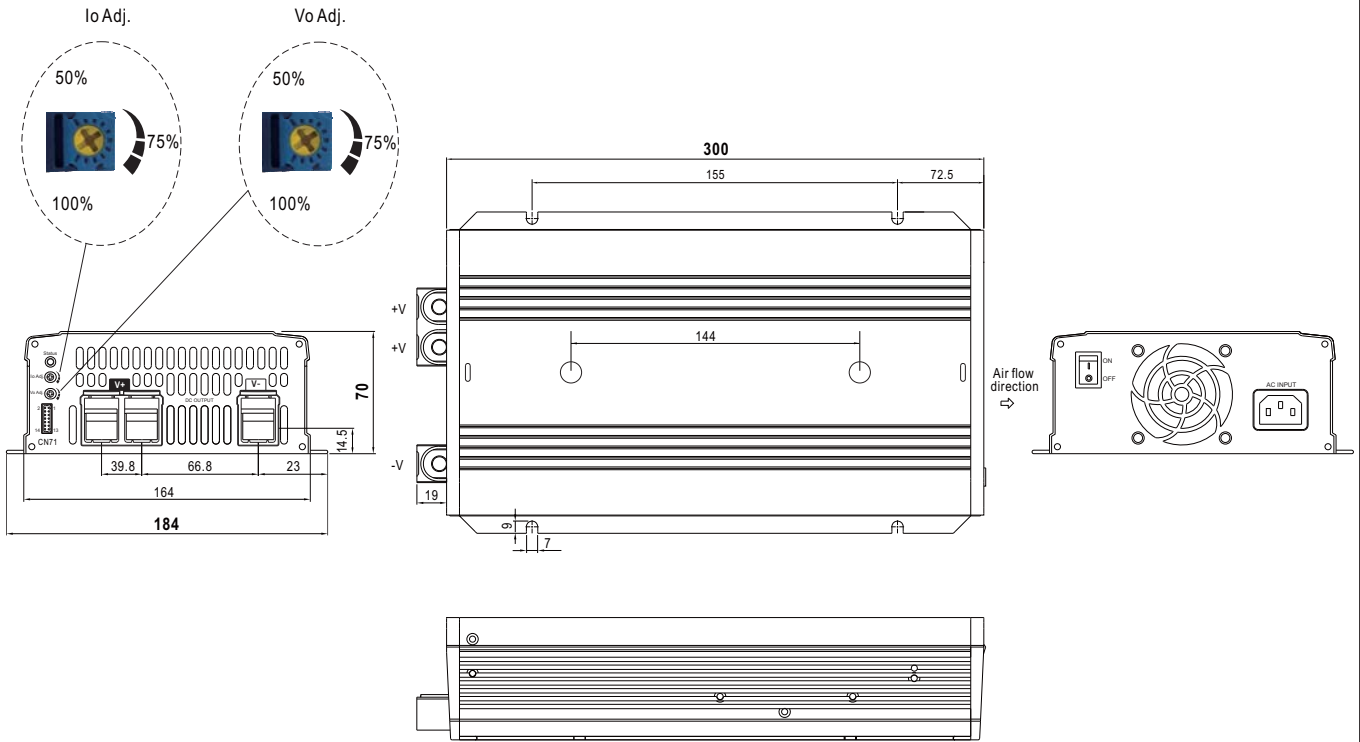
The NPP-1700 can be turned ON/OFF by using the "Remote Control" function.

| 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.286C Unit:mm



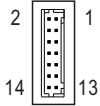
※ Connector Pin No. Assignment : HRS DF11-14DP-2DS or equivalent

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

※ LED Status Table

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

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



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

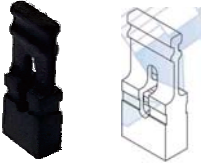
| Pin No. | Function | Description |
|-----------|--------------------------------|--|
| 1,2,11~14 | NC | ----- |
| 3,4 | Battery charger / Power supply | Open: Battery charger, Color of LED loading indicator: Reference to battery charger. Short: Power supply, Color of LED loading indicator :Green. |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

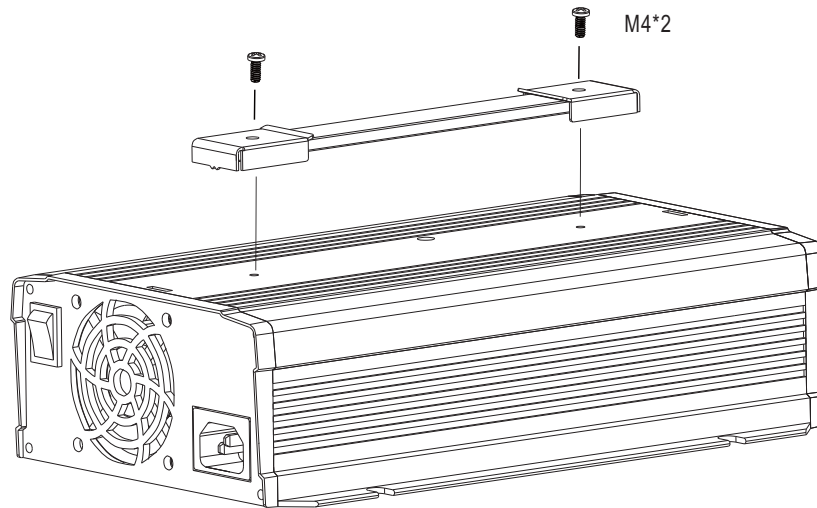
※ Battery Charger or Power Supply mode of pin 3 and pin 4 mating pin along with NPP-1700 (Standard accessory)

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

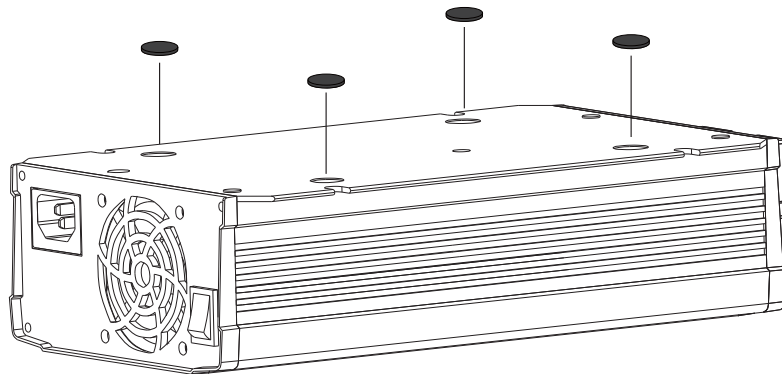
※ Carry handle (Optional accessory, battery charger and pull handle should be ordered seperately)

| 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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