

Features

- 90~264Vac universal AC input, built-in PFC
- Charger for compatible with lead-acid and li-ion batteries
- Fanless design
- Wide adjustable output range by VR:
 - ▶ Charging voltage adjustable(10.5~15.2V、 21~30.4V、 42~60.8V)
 - ▶ Charging current adjustable(50~100% rated current)
- 2 or 3 stage selectable by DIP S.W
- No load power consumption< 0.15W(AC S.W off)
- -30°C~+70°C wide operating temperature
- Protections: Short circuit / Over voltage /Over temperature / Battery reverse polarity protection
- Comply with UL/EN62368-1 and EN60335-1/2-29 dual certification
- Front panel LED indicator for charging status
- 3 years warranty

Applications

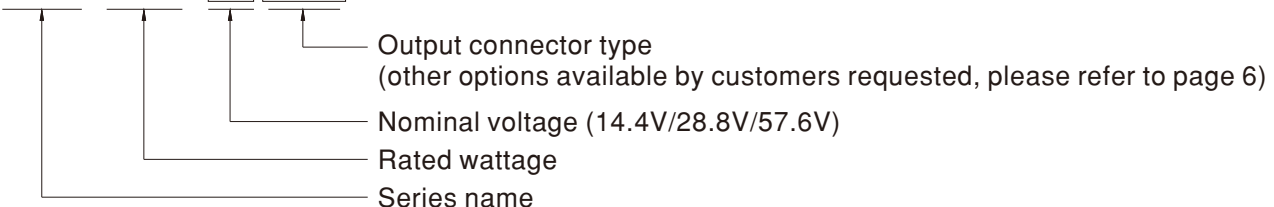
- Radio system backup solution
- Electric scooter charger
- Camping car · Buses · Heavy duty truck · Specialty vehicles
- Surveillance system
- Portable power tools

Description

NPB-120 series is a 120W charger for compatible with lead-acid (Flooded, Gel, AGM) and li-ion(Lithium iron, lithium manganese) batteries. This product is a class I power unit (with FG), equipped with a standard IEC320-C14 AC inlet and two or three-stage charging control. The entire series supplies different models with output voltages ranging between 10.5VDC and 60.8VDC that can satisfy the demands for various types of batteries devices.

Model Encoding

NPB - 120 - 24 XLR



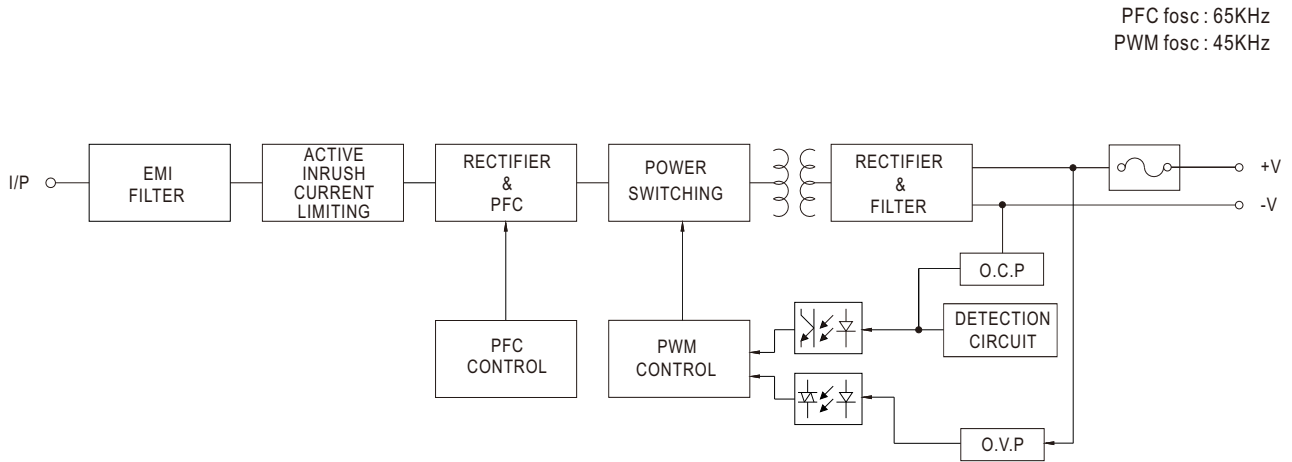
| Type | Output Connector | Safety | Note |
|------|--------------------|---|----------|
| XLR | 3 pin power pin | (48V UL certificated same as TB Type) | In Stock |
| AD1 | Anderson connector | | In Stock |
| TB | Terminal Block | | In Stock |



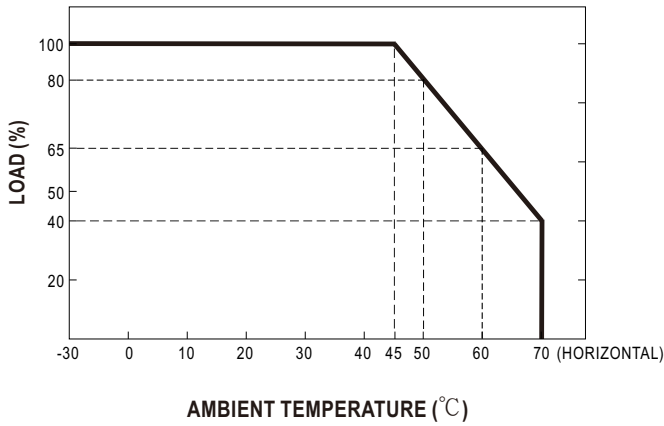
SPECIFICATION

| MODEL | | NPB-120-12□ | NPB-120-24□ | NPB-120-48□ | |
|--------------------------------|---|--|--|---|-------|
| | | □ =XLR, AD1, TB | | | |
| 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 ~ 15.2V | 21 ~ 30.4V | 42 ~ 60.8V | |
| | OUTPUT CURRENT(Typ.) Note.5 | 6.8A | 4A | 2A | |
| | CURRENT ADJUSTABLE RANGE | 50% ~ 100% | | | |
| | MAX. POWER Note.3 | 103.4W | 121.6W | 121.6W | |
| | RECOMMENDED BATTERY CAPACITY (AMP HOURS) Note.4 | 20 ~ 90AH | 15 ~ 50AH | 7 ~ 25AH | |
| INPUT | VOLTAGE RANGE Note.5 | 90 ~ 264VAC 127 ~ 370VDC | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | |
| | POWER FACTOR (Typ.) | PF>0.98/115VAC, PF>0.92/230VAC@12V,PF>0.93/230VAC@24/48V at full load | | | |
| | EFFICIENCY (Typ.) | XLR | 86.5% | 89% | 90.5% |
| | | AD1 | 86.5% | 89% | 90.5% |
| | | TB | 87% | 89.5% | 90.5% |
| | AC CURRENT (Typ.) | 1.5A/115VAC 0.8A/230VAC | | | |
| INRUSH CURRENT (Typ.) | COLD START 55A at 230VAC | | | | |
| PROTECTION | SHORT CIRCUIT Note.6 | Protection type : Constant current limiting, charger will shutdown after 5 sec, re-power on to recover | | | |
| | OVER VOLTAGE | 16 ~ 20V | 32 ~ 40V | 64 ~ 75V | |
| | | Protection type : Shut down and latch off o/p voltage, re-power on to recover | | | |
| | REVERSE POLARITY | By internal fuse open | | | |
| OVER TEMPERATURE | Hiccup mode, recovers automatically after temperature goes down | | | | |
| FUNCTION | CHARGING CURVE | 2 or 3 stage adjustable by DIP S.W | | | |
| 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 ~ 45°C) | | | |
| | VIBRATION | 10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes | | | |
| SAFETY & EMC (Note 7) | 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 | BS EN/EN55014-2,BS EN/EN55024,BS EN/EN55035 | | | |
| | | 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 | 631.8K hrs min. Telcordia TR/SR-332 (Bellcore) ; 225.8K hrs min. MIL-HDBK-217F (25°C) | | | |
| | DIMENSION | 180*96*49mm (L*W*H) | | | |
| | PACKING | 1.3Kg; 10pcs/ 14Kg / 1.13CUFT | | | |
| 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. Refer to derating curve.</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. This protection mechanism is specified for the case the short circuit occurs after the charger is turned on.</p> <p>7. The charger is considered a component which will be installed into a final equipment. 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>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | |

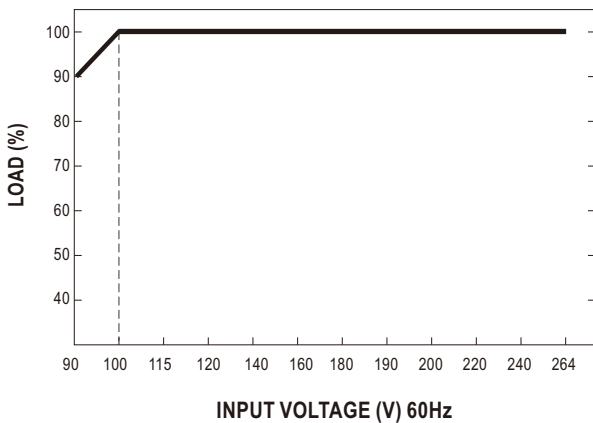
Block Diagram



Derating Curve



Static Characteristics

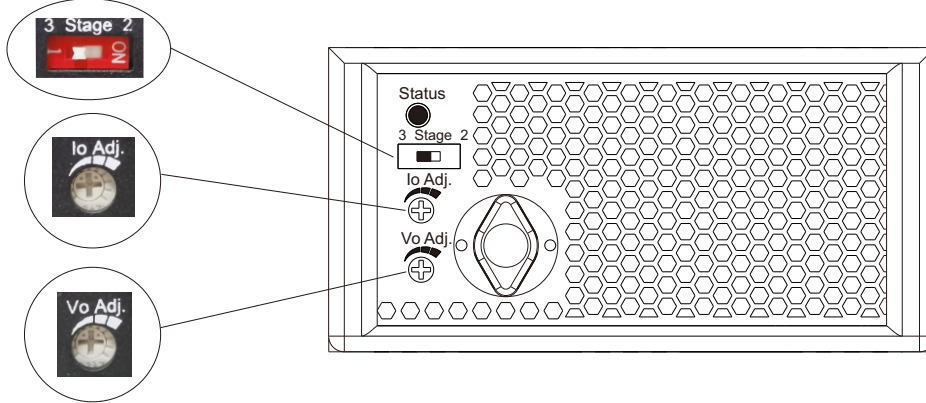


Function Manual

1. Charging Curve

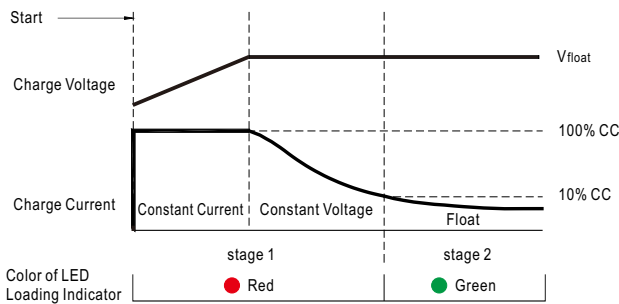
1-1 2 or 3 stage selectable by DIP S.W

※ This series provides 2 or 3 stage charging curve. (Default 3 stage)



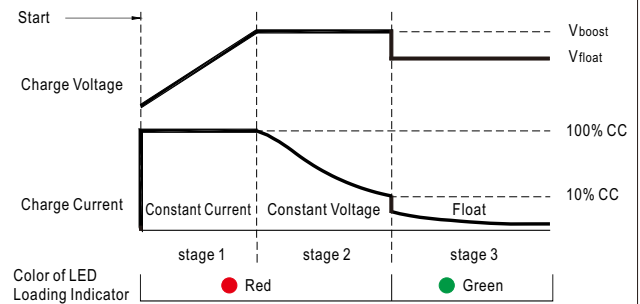
1-2 Charging Curve by DIP S.W

Ⓒ 2 stage charging curve



| State | NPB-120-12 | NPB-120-24 | NPB-120-48 |
|--------------------|------------|------------|------------|
| Constant Current | 6.8A | 4A | 2A |
| V _{float} | 13.8V | 27.6V | 55.2V |

Ⓒ 3 stage charging curve



| State | NPB-120-12 | NPB-120-24 | NPB-120-48 |
|--------------------|------------|------------|------------|
| Constant Current | 6.8A | 4A | 2A |
| V _{boost} | 14.4V | 28.8V | 57.6V |
| V _{float} | 13.8V | 27.6V | 55.2V |

Ⓒ 2 stage charging cure is suitable for Li-ion batteries (lithium iron and lithium manganese),

3 stage charging cure is suitable for lead-acid batteries (flooded, Gel and AGM).

2. Charging voltage adjustable by VR

| Model | NPB-120-12 <input type="checkbox"/> | NPB-120-24 <input type="checkbox"/> | NPB-120-48 <input type="checkbox"/> |
|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Output voltage adjustable range | 10.5~15.2V | 21~30.4V | 42~60.8V |



3. Charging current adjustable by VR

| Model | NPB-120-12 <input type="checkbox"/> | NPB-120-24 <input type="checkbox"/> | NPB-120-48 <input type="checkbox"/> |
|---------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Output current adjustable range | 3.4~6.8A | 2~4A | 1~2A |



4. Front panel LED indicators & Corresponding signal at function pins

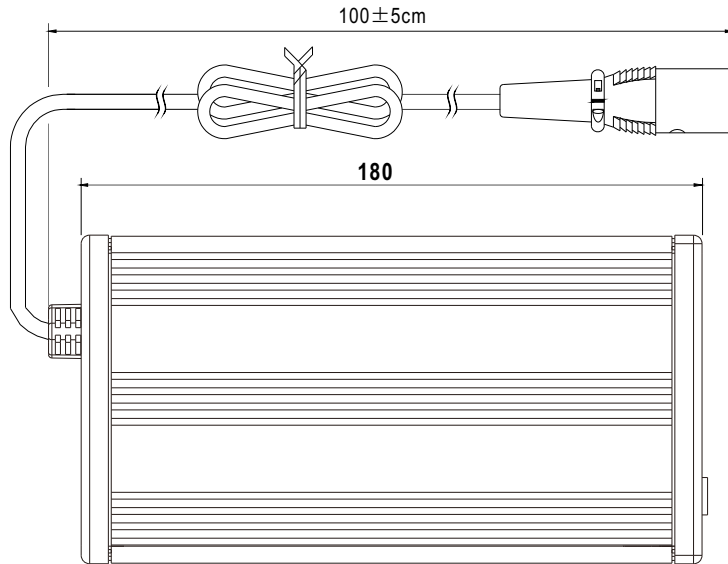
| LED | Description |
|---------|---------------------------------|
| ● Green | Float (stage 3) or Battery full |
| ● Red | Charging (stage 1 or stage 2) |



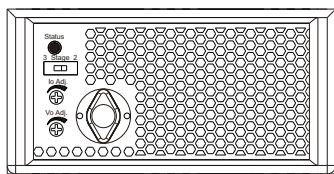
■ Mechanical Specification

◎ NPB-120-xx XLR/AD1
(Cable Type)

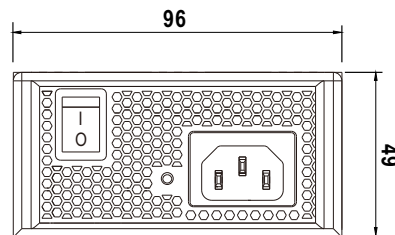
Case No. PS-120F Unit:mm



| XLR | AD1 |
|-----|-----|
| | |

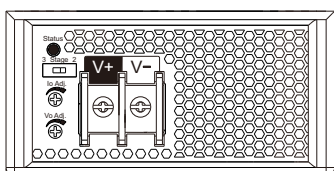


(Output Side)

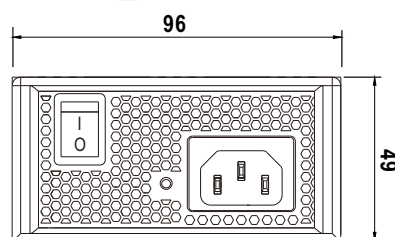


(Input Side)

◎ NPB-120-xx TB
(Terminal Block Type)



(Output Side)



(Input Side)

Plug Assignment

☉ Standard Output Connector

3pin XLR
UNICABLE 89M103-3P or equivalent

| | PIN NO. | OUTPUT |
|--|---------|--------|
| | 1 | +V |
| | 2,3 | -V |

AD1
housing: Anderson 1327FP(red), 1327G6FP(black)
contacts: Anderson 261G2 (45A) or equivalent

Red(+V) Black(-V)

TB
DT-66-B11W-02 or equivalent
Rating: 300V 40A

+V -V

☉ Optional DC plug: (Available in customized)

| Min. DIN 4 Pin with Lock (male) | Type No. | Pin Assignment | |
|---|----------|----------------|-------------|
| | | PIN No. | Output(<7A) |
| <p>KYCON KPPX-4P equivalent</p> | R7B | 1 | +Vo |
| | | 2 | -Vo |
| | | 3 | -Vo |
| | | 4 | +Vo |
| DIN 4 Pin XLR | Type No. | Pin Assignment | |
| | XLR4 | 1 | +Vo |
| | | 2 | +Vo |
| | | 3 | -Vo |
| | | 4 | -Vo |
| DIN 3 Pin | Type No. | Pin Assignment | |
| | D3P | 1 | +Vo |
| | | 2 | -Vo |
| | | 3 | -Vo |
| DIN 2 Pin | Type No. | Pin Assignment | |
| | D2P | 1 | -Vo |
| | | 2 | +Vo |
| DIN 3 Pin | Type No. | Pin Assignment | |
| | INL3 | N | +Vo |
| | | L | -Vo |
| AMP 1-480702-0 (6.35mm) equivalent | Type No. | Pin Assignment | |
| <p>FG not connected to output connector</p> | C4P | 1 | +Vo |
| | | 2 | +Vo |
| | | 3 | -Vo |
| | | 4 | -Vo |

INSTALLATION MANUAL

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

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