



# MEAN WELL NPB-240-12 Series Compact Size and Wide Output Range Charger Owner's Manual

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**MEAN WELL NPB-240-12 Series Compact Size and Wide Output Range Charger**



- **Output connector:** TB type



- **Output connector:** AD1/XLR type



The NPB-240 series is a compact size and wide output range charger with UL62368-1 BS EN/EN62368-1, IEC62368-1 TPTC004 AS/NZS60335-1/2-29, BS EN/EN60335-1/2-29, and IEC60335-1/2-29 certifications. It has a BOOST CHARGE VOLTAGE(Vboost)(default) of 14.4V, 28.8V, and 57.6V, and FLOAT CHARGE VOLTAGE(Vfloat)(default) of 13.8V, 27.6V, and 55.2V. The voltage adjustable range is 10.5 ~ 15.2V, 21 ~ 30.4V, and 42 ~ 60.8V, respectively, for each model of the NPB-240 series.

The charger has an output connector of TB type for NPB-240-12 model and AD1/XLR type for the other models. The output current is adjustable in the range of 50% ~ 100%. The charger has a maximum power of Note.3 205.2W and is recommended for battery capacity of 55 ~ 180AH (Ampere Hours). The leakage current from the battery is  $0.98/115VAC$ ,  $PF>0.95/230VAC$  at full load. The input efficiency varies between 88.5% to 93% for different models.

## Usage Instructions

To use the NPB-240 series charger, follow the below instructions:

1. Ensure that the charger specifications match with the battery specifications. If not, consult the battery vendor and MEAN WELL for details.
2. Connect the charger to the battery using the appropriate output connector (TB type for NPB-240-12 model and AD1/XLR type for other models).
3. Select the charging curve using DIP S.W. The series provides a 2 or 3 stage charging curve, with the default being a 3-stage charging curve.
4. The charger has an adjustable output current range of 50% ~ 100%. Adjust it as per the requirement.
5. The charger has a maximum power of Note.3 205.2W and is recommended for battery capacity of 55 ~ 180AH (Ampere Hours).

## 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

## GTIN CODE

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

## Description

NPB-240 series is a 240W 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 Encodina

NPB - 240 - 24 XLR

Output connector type  
(other options available by customers requested, please refer to page 6)

Nominal voltage (14.4V/28.8V/57.6V)

Rated wattage

Series name

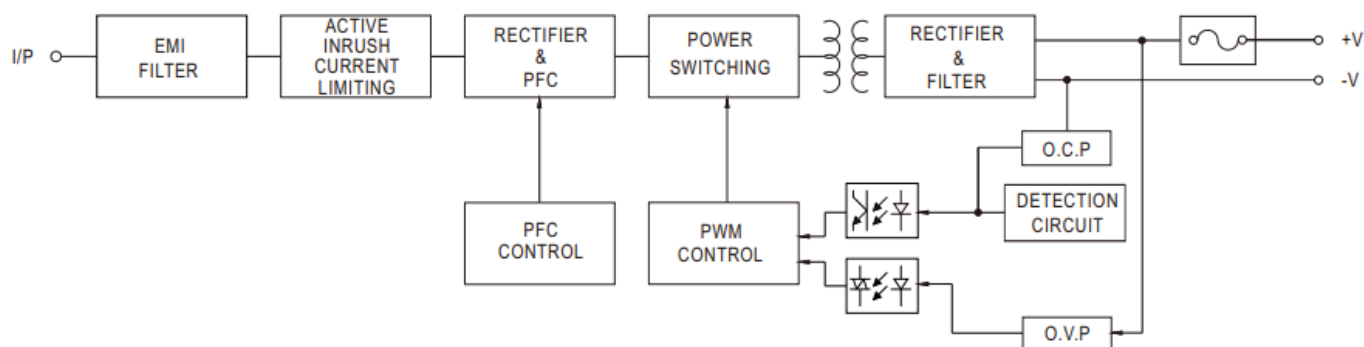
Type	Output Connector	Safety	Note
XLR	4 pin power pin 	   	In Stock
AD1	Anderson Equivalent Connector 		In Stock
TB	Terminal Block 		In Stock

## SPECIFICATION

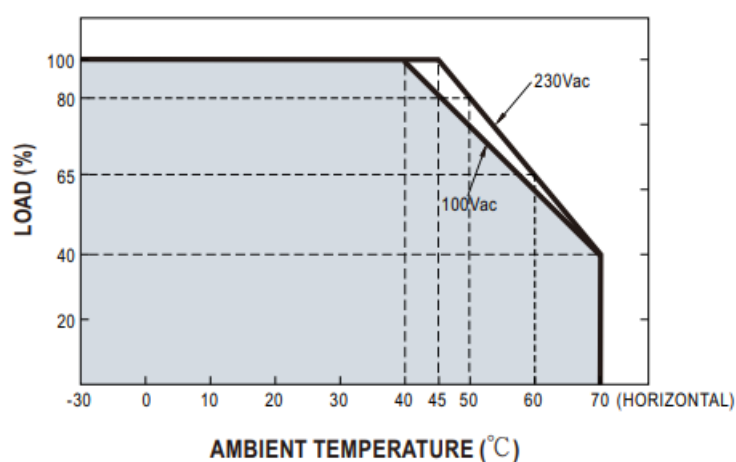
MODEL		NPB-240-12□	NPB-240-24□	NPB-240-48□
		□ =XLR, AD1, TB		
OUTPUT	BOOST CHARGE VOLTAGE(Vboost)(default)	14.4V	28.8V	57.6V
	FLOAT CHARGE VOLTAGE(Vfloat)(default)	13.8V	27.6V	55.2V
	VOLTAGE ADJUSTABLE RANGE	10.5 ~ 15.2V	21 ~ 30.4V	42 ~ 60.8V
	OUTPUT CURRENT(Typ.) Note.5	13.5A	8A	4A
	CURRENT ADJUSTABLE RANGE	50% ~ 100%		
	MAX. POWER Note.3	205.2W	243.2W	243.2W
	RECOMMENDED BATTERY CAPACITY (AMP HOURS) Note.4	55 ~ 180AH	30 ~ 100AH	15 ~ 50AH
	LEAKAGE CURRENT FROM BATTERY (Typ.)	<1mA		
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.)	XLR	88.5%	92%
		AD1	88.5%	92%
		TB	89%	93%
	AC CURRENT (Typ.)	3A/115VAC 1.5A/230VAC		
	INRUSH CURRENT (Typ.)	COLD START 50A at 230VAC		
	LEAKAGE CURRENT	<0.75mA/240VAC		
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
	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	SAFETY STANDARDS	CB IEC62368-1, IEC60335-1/2-29, Dekra BS EN/EN62368-1, BS EN/EN60335-1/2-29, UL62368-1, AS/NZS60335-1/2-29, 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	-----
		BS EN/EN55014-2, BS EN/EN55024, BS EN/EN55035		

(Note 7)	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	1284.9K hrs min. Telcordia TR/SR-332 (Bellcore) ; 157.5K hrs min. MIL-HDBK-217F (25℃)		
	DIMENSION	182.7*96*49mm (L*W*H)		
	PACKING	1.3Kg; 10pcs/ 14Kg / 1.13CUFT		
NOTE	1. Modification for charger specification may be required for different battery specification. Please contact battery vendor and MEAN WELL for details. 2. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 3. Refer to derating curve. 4. This is MEAN WELL's suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation. 5. Derating may be needed under low input voltages. Please check the derating curve for more details. 6. This protection mechanism is specified for the case the short circuit occurs after the charger is turned on. 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 <a href="http://www.meanwell.com">http://www.meanwell.com</a> )			
	※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a>			

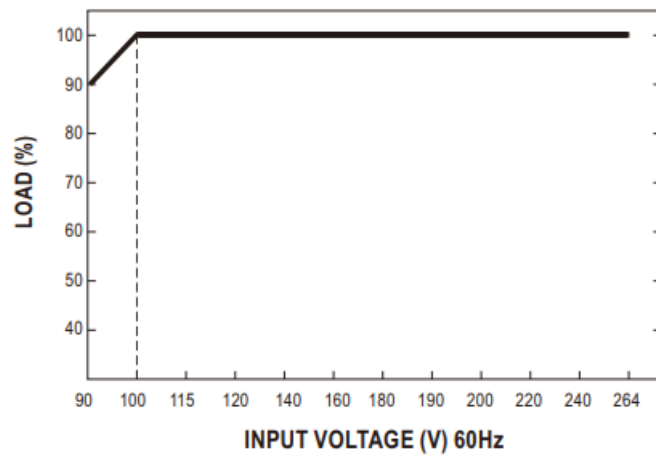
## Block Diagram



## Derating Curve



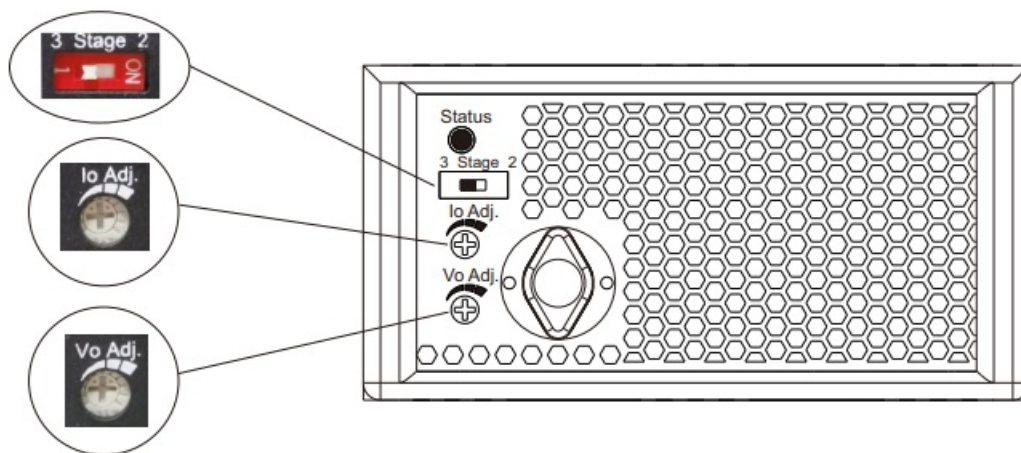
## Static Characteristics



## Function Manual

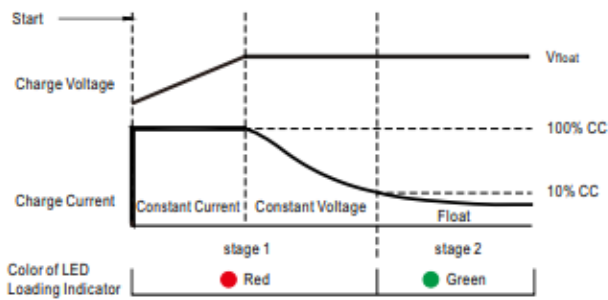
### Charging Curve

- **2 or 3 stage selectable by DIP S.W**
  - This series provides 2 or 3 stage charging curve. (Default 3 stage)

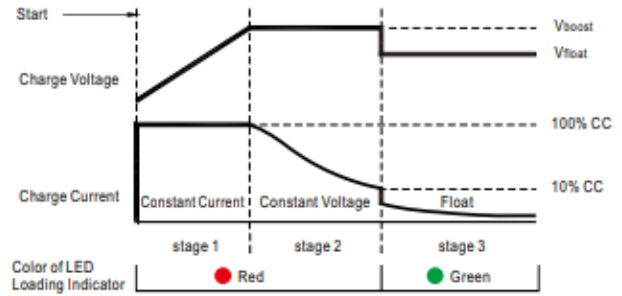


### Charging Curve by DIP S.W

- **2 stage charging curvem**
- **3 stage charging curve**



State	NPB-240-12	NPB-240-24	NPB-240-48
Constant Current	13.5A	8A	4A
V <sub>float</sub>	13.8V	27.6V	55.2V



State	NPB-240-12	NPB-240-24	NPB-240-48
Constant Current	13.5A	8A	4A
V <sub>boost</sub>	14.4V	28.8V	57.6V
V <sub>float</sub>	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).

### Charging voltage adjustable by VR

Model	NPB-240-12 <input type="checkbox"/>	NPB-240-24 <input type="checkbox"/>	NPB-240-48 <input type="checkbox"/>
Output current adjustable range	6.75~13.5A	4~8A	2~4A



### Charging current adjustable by VR

Model	NPB-240-12 <input type="checkbox"/>	NPB-240-24 <input type="checkbox"/>	NPB-240-48 <input type="checkbox"/>
Output voltage adjustable range	10.5~15.2V	21~30.4V	42~60.8V



### Front panel LED indicators & Corresponding signal at function pins

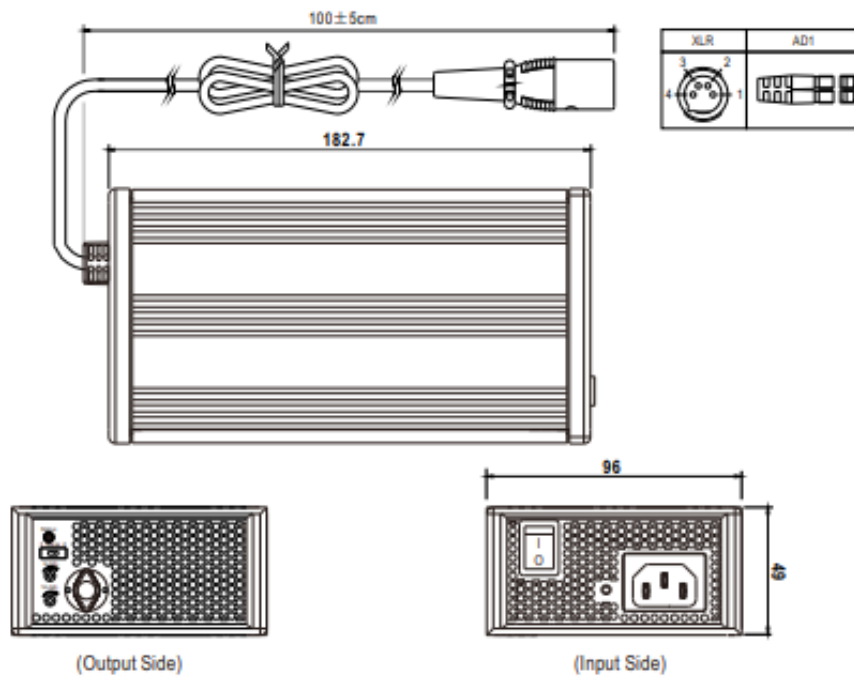
LED	Description
● Green	Float (stage 3) or Battery full
● Red	Charging (stage 1 or stage 2)



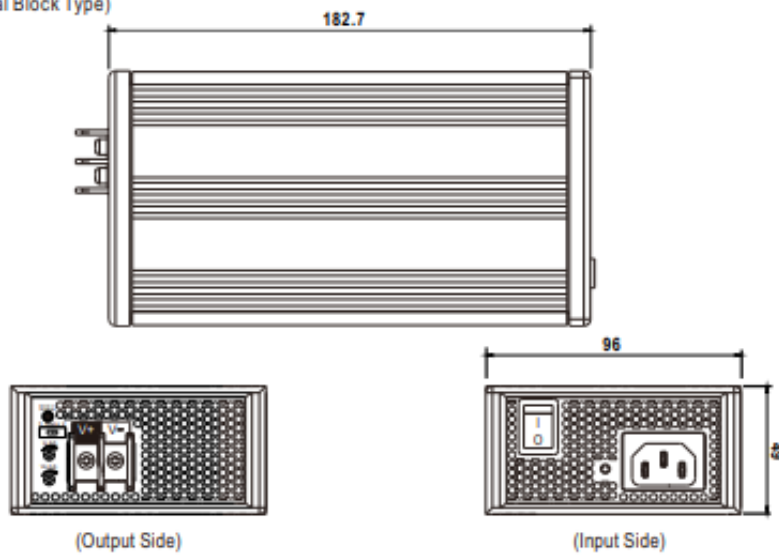
### Mechanical Specification

● NPB-240-xx XLR/AD1  
(Cable Type)

Case No.PS-120F Unit:mm




● NPB-240-xx TB  
(Terminal Block Type)

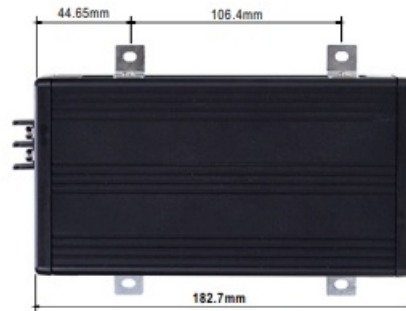
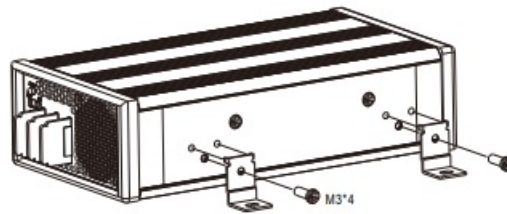


## Accessory List

- Bracket (Optional accessory, Should ordered seperately)

MW's Order No.	Item	Quantity
DGG2MHS012D		4pcs/per model

## Installation Diagram



## Plug Assignment









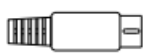









- Standard Output Connector

4pin XLR		
UNICABLE 89M103-4P or equivalent		
	PIN NO.	OUTPUT
	1,2	+V
	3,4	-V

AD1	
housing: Anderson 1327(red), 1327G6(black) equivalent contacts: Anderson 261G2 (45A) 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)
   KYCON KPPX-4P equivalent	R7B	1	+Vo
		2	-Vo
		3	-Vo
		4	+Vo
DIN 3 Pin XLR	Type No.	Pin Assignment	
		PIN No.	Output(<10A)
   3 pin XLR	XLR3	1	+Vo
		2	+Vo
		3	-Vo
DIN 3 Pin	Type No.	Pin Assignment	
		PIN No.	Output(<7A)
   1 2 3	D3P	1	+Vo
		2	-Vo
		3	-Vo
DIN 2 Pin	Type No.	Pin Assignment	
		PIN No.	Output(<5A)
   1 2	D2P	1	-Vo
		2	+Vo
DIN 3 Pin	Type No.	Pin Assignment	
		PIN No.	Output(<10A)
   N L	INL3	N	+Vo
		L	-Vo
AMP 1-480702-0 (6.35mm) equivalent	Type No.	Pin Assignment	
		PIN No.	Output(<7A)
   FG not connected to output connector	C4P	1	+Vo
		2	+Vo
		3	-Vo
		4	-Vo


## QR SCAN



## INSTALLATION MANUAL

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

## Documents / Resources

	<p><b><a href="#">MEAN WELL NPB-240-12 Series Compact Size and Wide Output Range Charger</a></b> [pdf]          Owner's Manual          NPB-240-12 Series Compact Size and Wide Output Range Charger, NPB-240-12 Series, Compact Size and Wide Output Range Charger, Wide Output Range Charger, Range Charger</p>
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## References

- [MEAN WELL Installation Manual-MEAN WELL Switching Power Supply Manufacturer](#)

-  [Product Liability Disclaimer-MEAN WELL Switching Power Supply Manufacturer](#)
-  [Global Trade Item Number \(GTIN\)-MEAN WELL Switching Power Supply Manufacturer](#)

Manuals+.