



120W Compact Size and Wide Output Range Charger

NPB-120 series

Output connector: TB type



Output connector: AD1/XLR type



User's Manual



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

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

- 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	3 pin power pin 		In Stock
AD1	Anderson Equivalent Connector 	(48V UL certificated same as TB Type)	In Stock
TB	Terminal Block 		In Stock



120W Compact Size and Wide Output Range Charger

NPB-120 series

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	
	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>0.92/230VAC@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					
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	
			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℃ (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 ~ 45℃)					
	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, AS/NZS60335-1/2-29, J62368-1(2020) (except for 48XLR & TB type),EAC TP TC 004, BSMI CNS15598-1 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,CNS15936				Class B	
		Radiated	BS EN/EN55032 (CISPR32),BS EN/EN55014-1,CNS15936				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,J55032(H29) (except for 48XLR & TB type)						
		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		1895.4K hrs min. Telcordia TR/SR-332 (Bellcore) ; 225.8K 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 https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf) ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx							

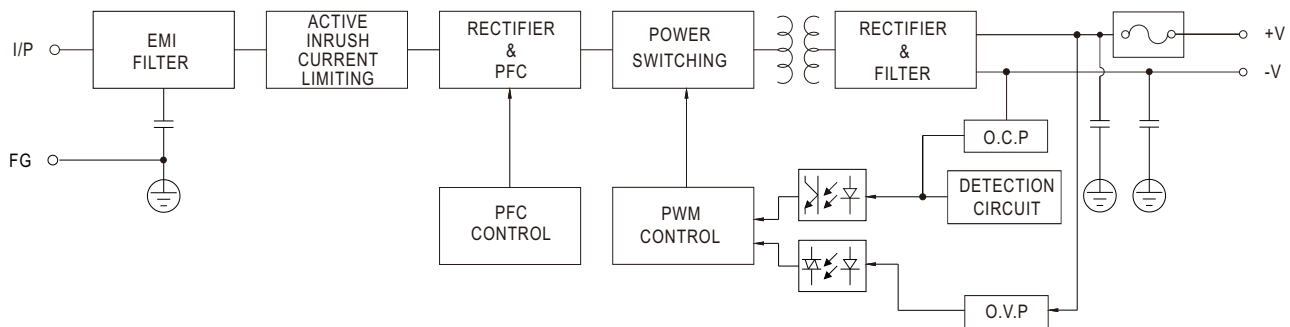


120W Compact Size and Wide Output Range Charger

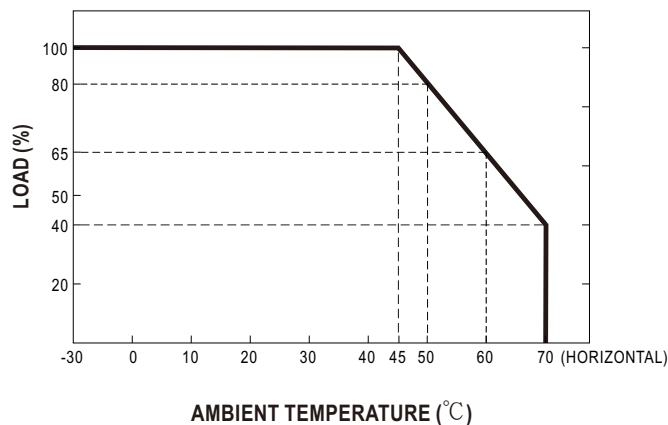
NPB-120 series

■ Block Diagram

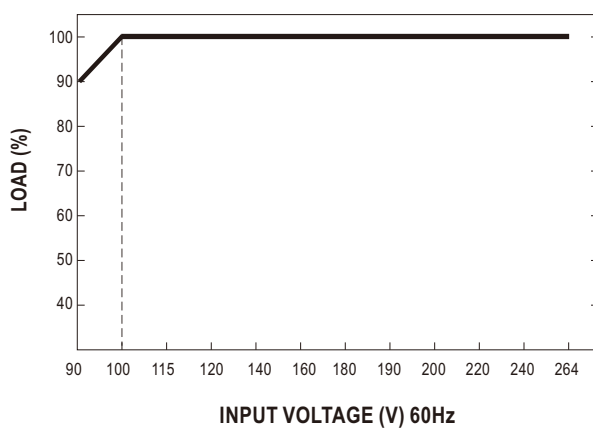
PFC fosc : 65KHz
PWM fosc : 45KHz



■ Derating Curve



■ Static Characteristics

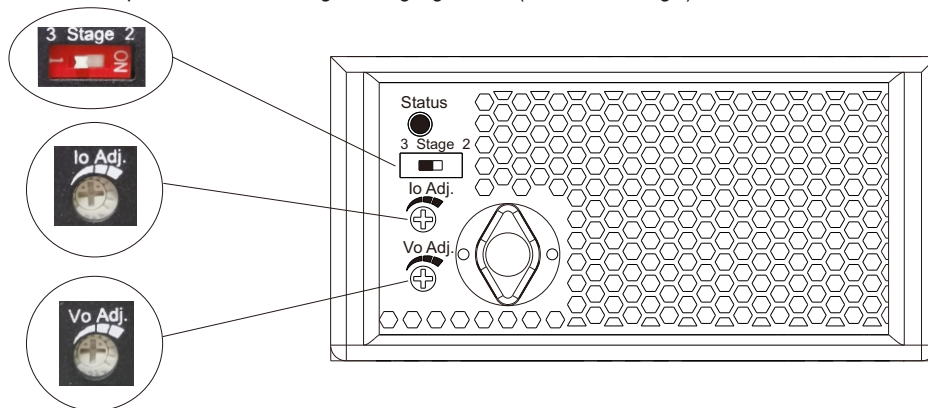




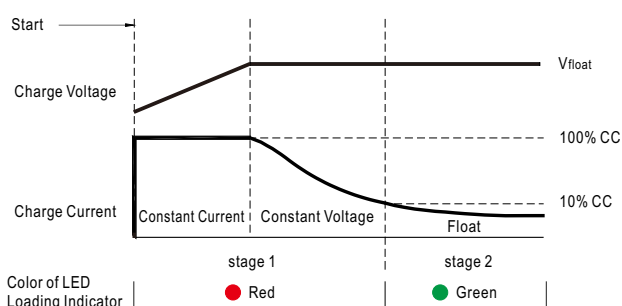
120W Compact Size and Wide Output Range Charger

NPB-120 series**Function Manual****1. Charging Curve****1-1 2 or 3 stage selectable by DIP S.W**

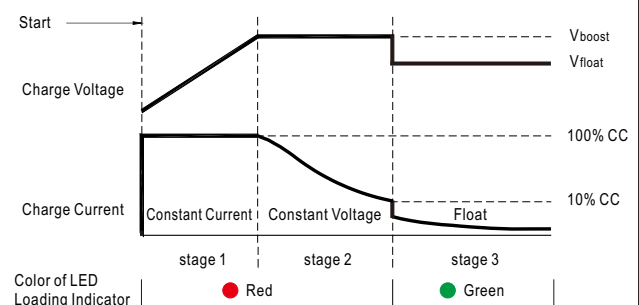
※ This series provides 2 or 3 stage charging curve. (Default 3 stage)

**1-2 Charging Curve by DIP S.W**

◎ 2 stage charging curve



◎ 3 stage charging curve



◎ 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 ☐	NPB-120-24 ☐	NPB-120-48 ☐
Output voltage adjustable range	10.5~15.2V	21~30.4V	42~60.8V

**3. Charging current adjustable by VR**

Model	NPB-120-12 ☐	NPB-120-24 ☐	NPB-120-48 ☐
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)





120W Compact Size and Wide Output Range Charger

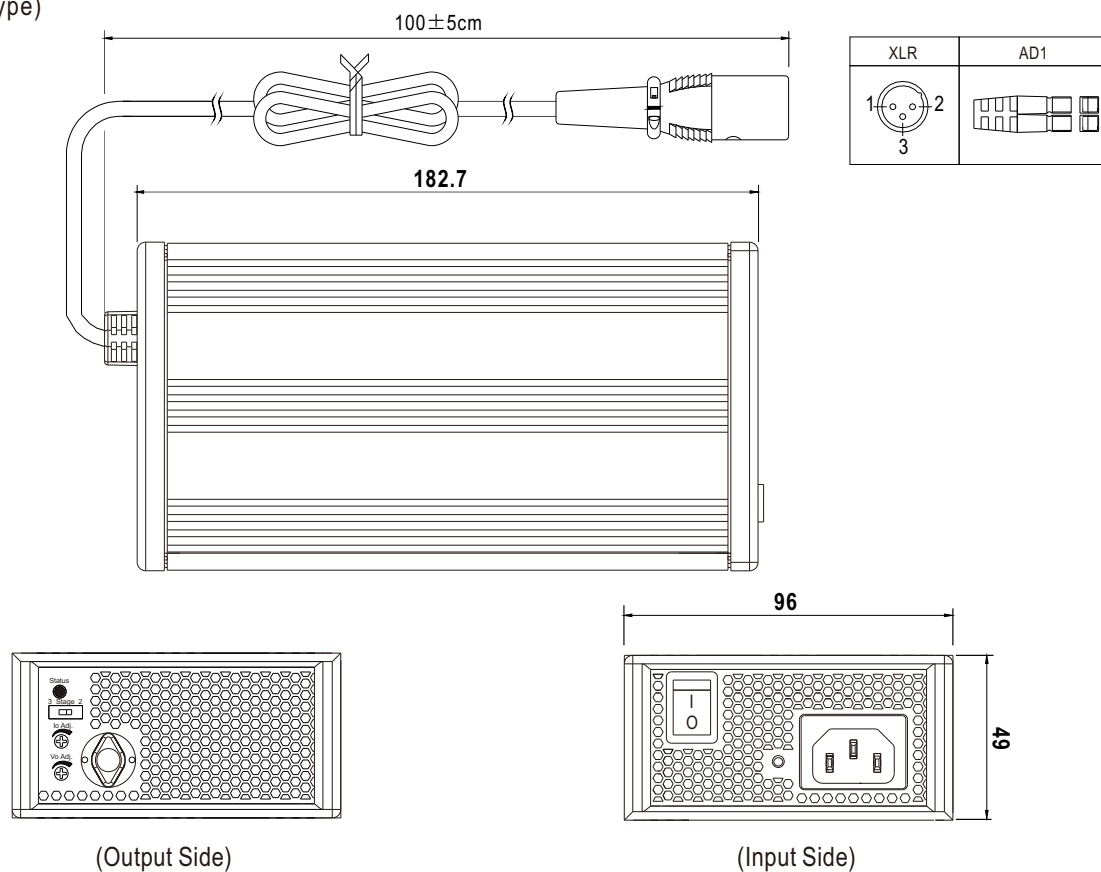
NPB-120 series

Mechanical Specification

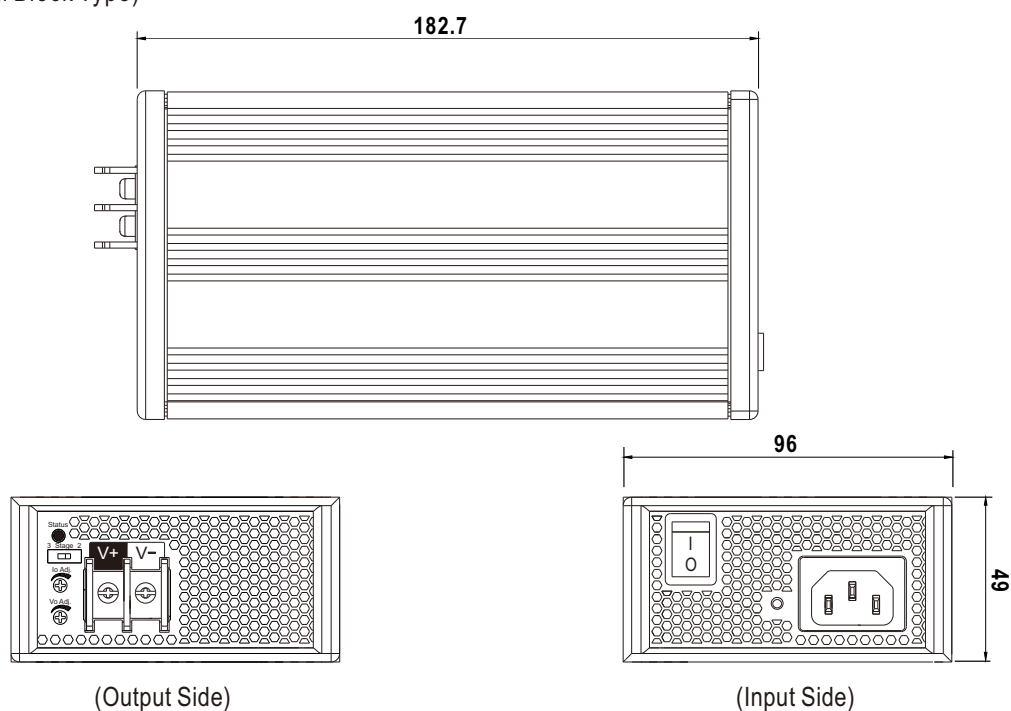
(Unit: mm , tolerance ± 1 mm)

Case No.PS-120F

NPB-120-xx XLR/AD1 (Cable Type)



NPB-120-xx TB (Terminal Block Type)





120W Compact Size and Wide Output Range Charger

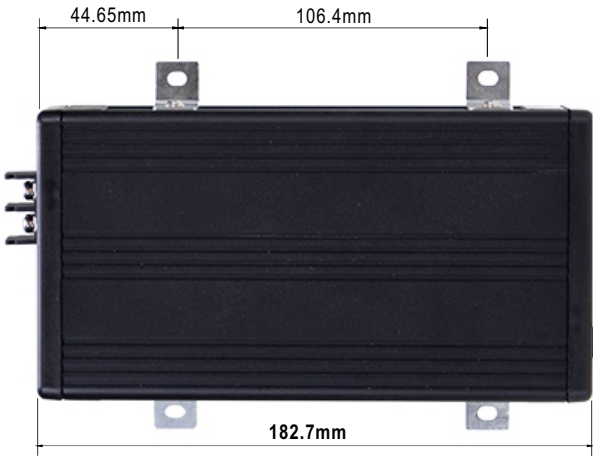
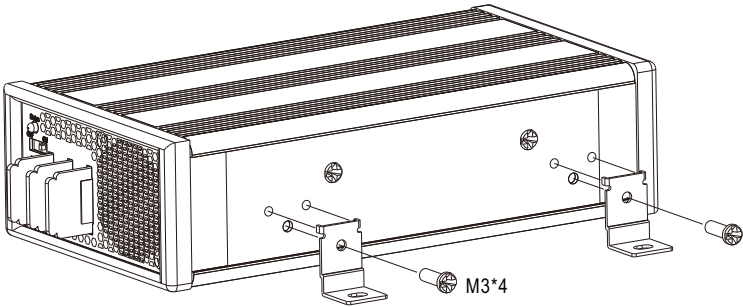
NPB-120 series

■ Accessory List

※ Bracket (Optional accessory, Should ordered separately)

MW's Order No.	Item	Quantity
PGG2MHS012D		4pcs/per model

■ Installation Diagram



■ Plug Assignment

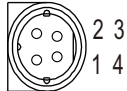
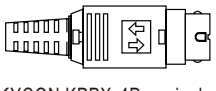
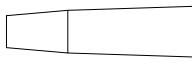
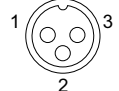
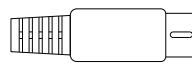
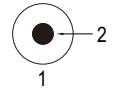
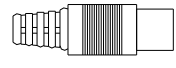
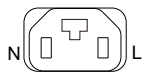
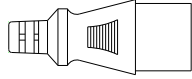
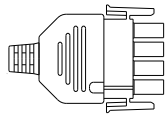
◎ Standard Output Connector

3pin XLR		
UNICABLE 89M103-3P or equivalent		
	PIN NO.	OUTPUT
	1	+V
	2,3	-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 4 Pin XLR	Type No.	Pin Assignment	
		PIN No.	Output(<10A)
  	XLR4	1	+Vo
		2	+Vo
		3	-Vo
		4	-Vo
DIN 3 Pin	Type No.	Pin Assignment	
		PIN No.	Output(<7A)
  	D3P	1	+Vo
		2	-Vo
		3	-Vo
DIN 2 Pin	Type No.	Pin Assignment	
		PIN No.	Output(<5A)
  	D2P	1	-Vo
		2	+Vo
DIN 3 Pin	Type No.	Pin Assignment	
		PIN No.	Output(<10A)
  	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

■ INSTALLATION MANUAL

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