



■ Features

- Charger for Lithium-Ion batteries (Li-ion, LiFePO4) and Lead-Acid (AGM, GEL, VRLA) batteries
- Built-in 4 stage charging curve (For Lithium batteries) and 3 stage charging curve (For Lead-Acid batteries)
- Universal AC input, world-wide range AC90-264V 50/60Hz
- With active PFC function, CE & FCC certifications
- Optional CAN communication
- Protection: Short circuit / Over voltage / Over temperature / Reverse polarity protection
- Waterproof and dustproof, IP67 class level

■ Applications

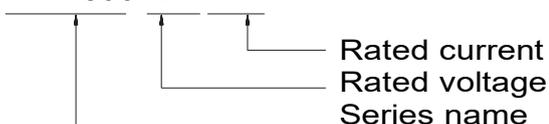
- Golf carts/ Buggy/Utility EV
- Electric forklift
- AGV/ Drone/ Robot
- Electric motorcycle/ tricycle
- Energy storage system
- Marina / Ship / Boat

■ Description

The WP1800 series is an aluminum alloy housing waterproof IP67 charger with a rated output power 1800W at 220-240VAC input and 1200W at 100-120VAC input, with programmable 3 and 4 stages charging curves for 48V 60V 72V 84V Lead-acid batteries (Gel, AGM, VRLA) and Lithium batteries (Li-ion, LiFePO4). They are widely used for golf club cart, utility EV, AGV and so on.

The part-number named rule as following:

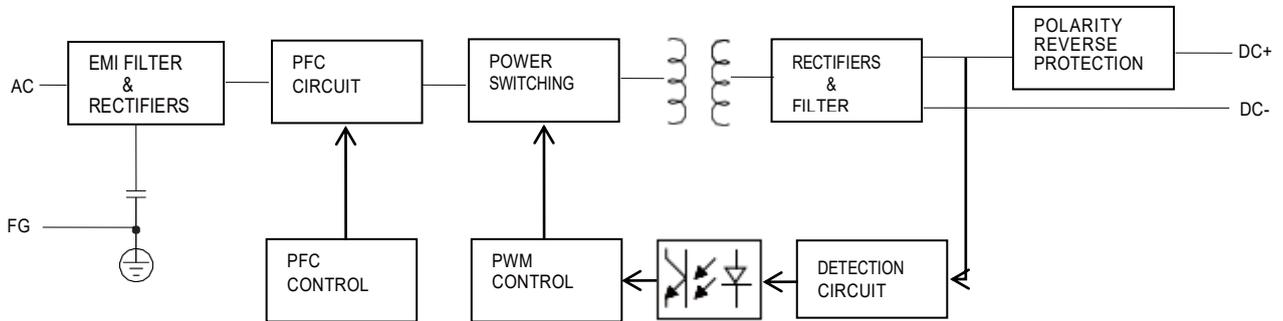
WP1800-XXXYYY



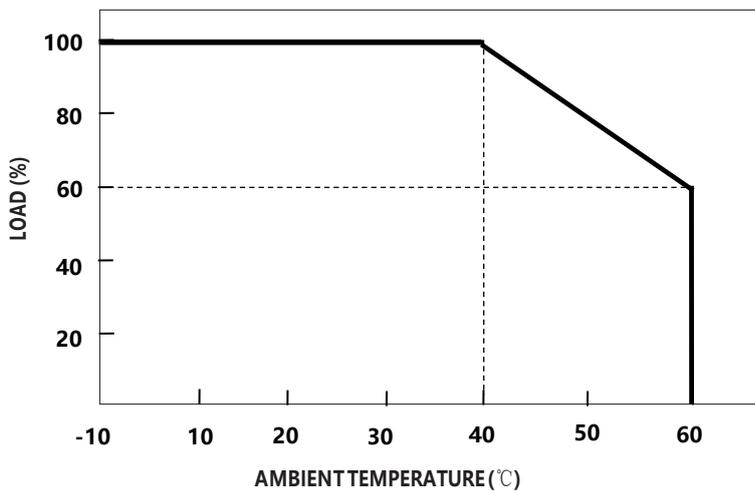
SPECIFICATION (Lead-Acid battery charger)

MODEL		WP1800-296500	WP1800-444400	WP 1800-592300	WP1800-740240	WP1800-888200	
OUTPUT	Charge voltage (High voltage)	29.6V±1%	44.4V±1%	59.2V±1%	74.0V±1%	88.8V±1%	
	Charge voltage range	20.0-29.6V	30.0-44.4V	40.0-59.2V	50.0-74.0V	60.0-88.8V	
	Float charge (Low voltage)	27.6V±1%	41.4V±1%	55.2V±1%	69.0V±1%	82.8V±1%	
	Charge current	200-240VAC	50.0A±10%	40.0A±10%	30.0A±10%	24.0A±10%	20.0A±10%
		100-120VAC	36.0A±10%	27.0A±10%	20.0A±10%	16.0A±10%	13.0A±10%
	Charge-end current	200-240VAC	≤10.0A ±20%	≤8.0A ±20%	≤6.0A ±20%	≤4.8A ±20%	≤4.0A ±20%
		100-120VAC	≤7.2A ±20%	≤5.4A ±20%	≤4.0A ±20%	≤3.2A ±20%	≤2.6A ±20%
	Rated power	200-240VAC	1480W	1776W	1776W	1776W	1776W
		100-120VAC	1065.6W	1198.8W	1184W	1184W	1154.4W
Recommended battery capacity Note.3	60 - 200Ah	40 - 150Ah	30 - 100Ah	20 - 80Ah	15 - 60Ah		
Leakage current from battery (Typ.)		≤1mA					
CHARGE INDICATOR	LED	Red: Battery capacity is less than 80%. Yellow: Battery capacity is greater than 80%. Green: Standby or battery is full					
INPUT	Rated input voltage	100 - 240VAC 50 / 60Hz					
	Input voltage range Note.4	90 - 264VAC					
	Power factor (Typ.)	PF>0.96 @full load					
	Input current (Typ.)	14A@100VAC					
	Inrush current (Typ.)	Cold start 75A @230VAC					
	Standby input power	< 6W					
PROTECTION	Efficiency (Typ.)	92%	92%	93%	93%	93%	
	Short circuit Note.5	Protection type : Shut down output					
	Over voltage	>15.5V*N					
	Reverse polarity	By internal relay					
ENVIRONMENT	Over temperature	Shut down output, recovers automatically after temperature goes down					
	Working temperature	-10 - +40°C (Refer to " Derating Curve")					
	Working humidity	0 - 90% RH					
	Storage temperature, humidity	-40 - +70°C, 0 - 95% RH					
	Cooling	Fan convection					
SAFETY& EMC(Note.6)	Vibration resistance	10 - 50Hz, 2G 10min. 1cycle, 60min. each along X, Y, Z axes					
	Max. temperature rise	< 30°C on casing					
	Hi-Pot Insulation	i/p to o/p: 3000V (1 min)					
	Safety standards	IEC62368					
	EMC Emission	Parameter	Standard			Test Level Note	
		Conducted	EN55032 FCC PART15			Class B	
		Radiated	EN55032 FCC PART15			Class B	
Harmonic Current		EN61000-3-2				
EMC IMMUNITY	EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11						
OTHERS	Voltage Flicker	EN61000-3-3				
	MTBF	30000H					
	Dimension	288*168*89mm (L*W*H)					
NOTE	Weight	4800g					
	<p>1. Modification for charger specification may be required for different battery specification. Please contact battery vendor and Green digital power 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. This is Green suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation.</p> <p>4. Derating may be needed under low input voltages. Please check the derating curve for more details.</p> <p>5. This protection mechanism is specified for the case the short circuit occurs after the charger is turned on.</p> <p>6. The battery charger is considered as an independent unit, but the final equipment still need to re-confirm that the whole system complies with the EMC directives. For guidance on how to perform these EMC tests, please refer to "EM I testing of component power supplies."</p>						

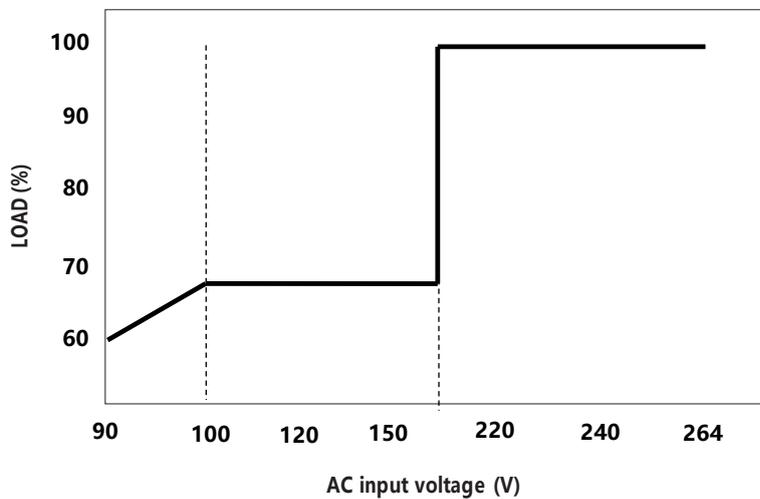
■ Block Diagram



■ Derating Curve

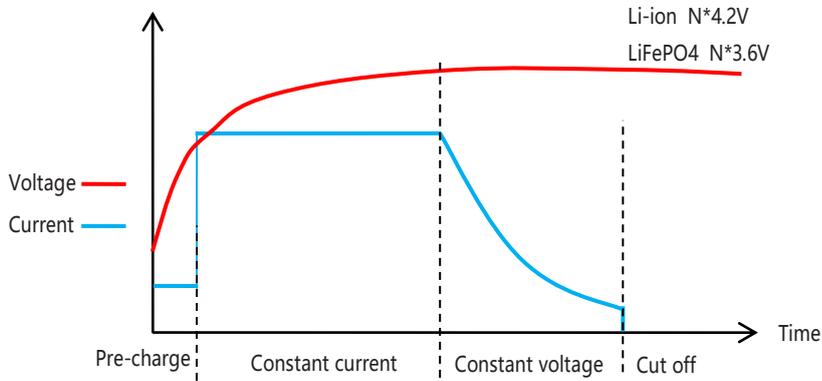


■ Static Characteristics

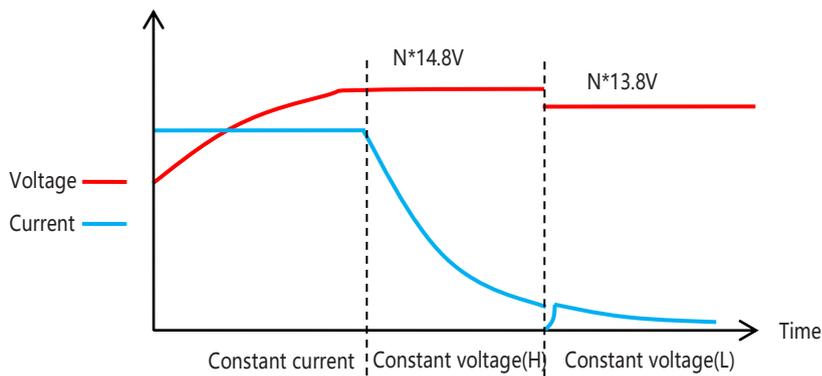


1.Charging Curve

◎ 4 stage charging curve(Li-ion & LiFePO4 battery charger)



◎ 3 stage charging curve(Lead-Acid battery charger)



2.LED indication

Green ON: Full charged, or idle

Yellow ON: Charging, capacity >= 80%

Red ON: Charging, capacity < 80%
Red flashing: Error, Shorted or Reversed

■ Mechanical specification

