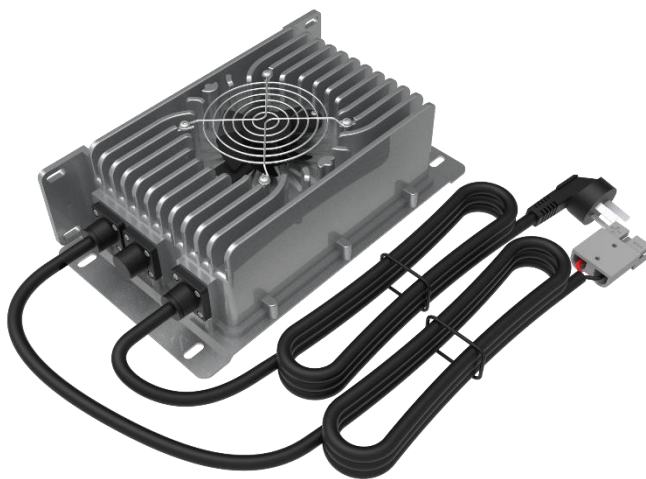




■ Features

- 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

Output current, range 10A~50A, YYY=260 means 26.0A

Output voltage, range 20V~88V, XXX=288 means 28.8V

Series name

Li-ion battery charger (Only the adopted models are listed in table, for other output voltage please reach our sales)

MODEL		WP1800-294500	WP1800-420400	WP1800-546300	WP1800-672250	WP1800-840200	
OUTPUT	Charge voltage limited	29.4V±1%	42.0V±1%	54.6V±1%	67.2V±1%	84.0V±1%	
	Charge voltage range	17.5-29.4V	25.0-42.0V	32.5-54.6V	40-67.2V	50.0-84.0V	
	Charge current	200-240VAC	50.0A±10%	40.0A±10%	30.0A±10%	25.0A±10%	20.0A±10%
		100-120VAC	36.0A±10%	28.0A±10%	20.0A±10%	17.5A±10%	14.0A±10%
	Pre-charge current	20 % of CC (constant current)					
	Charge-end current	200-240VAC	≤5.0A ±10%	≤4.0A ±10%	≤3.0A ±10%	≤2.5A ±10%	≤2.0A ±20%
		100-120VAC	≤3.6A ±10%	≤2.8A ±10%	≤2.0A ±10%	≤1.8A ±10%	≤1.4A ±20%
	Rated power	200-240VAC	1470W	1680W	1638W	1680W	1680W
		100-120VAC	1058.4W	1176W	1092W	1776W	1176W
Recommended battery capacity Note.3	7s LIPO/Li-ion 100 - 500Ah		10S LIPO/ Li-ion 80 - 400Ah	13S LIPO/LI-ION 60 - 300Ah	16S LIPO/ LI-ION 50 - 250Ah	20S LIPO/LI-ION 40 - 200Ah	
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	>4.35V*N					
	Reverse polarity	By internal relay					
ENVIRONMENT	Over temperature	Shut down output, recovers automatically after temperature goes down					
	Working temperature	-10 - +40℃ (Refer to " Derating Curve")					
	Working humidity	0 - 90% RH					
	Storage temperature, humidity	-40 - +70℃, 0 - 95% RH					
	Cooling	Fan convection					
	Vibration resistance	10 – 50Hz, 2G 10min. 1cycle, 60min. each along X, Y, Z axes					
SAFETY & EMC (Note.6)	Max. temperature rise	< 30℃ on casing					
	Hi-Pot Insulation	i/p to o/p: 3000V (1 min)					
	Safety standards	IEC62368					
	EMC Emission	Parameter	Standard			Test Level I Note	
		Conducted	EN55032 FCCPART15			Class B	
		Radiated	EN55032 FCCPART15			Class B	
		Harmonic Current	EN61000-3-2				
		Voltage Flicker	EN61000-3-3				
EMC IMMUNITY	EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11						
OTHERS	MTBF	30000H					
	Dimension	288*168*89mm (L*W*H)					
	Weight	4800g					
NOTE	1.Modification for charger specification may be required for different battery specification. Please contact battery vendor and Green digital power for details. 2.All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 3.This is Green suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation. 4.Derating may be needed under low input voltages. Please check the derating curve for more details. 5.This protection mechanism is specified for the case the short circuit occurs after the charger is turned on. 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."						

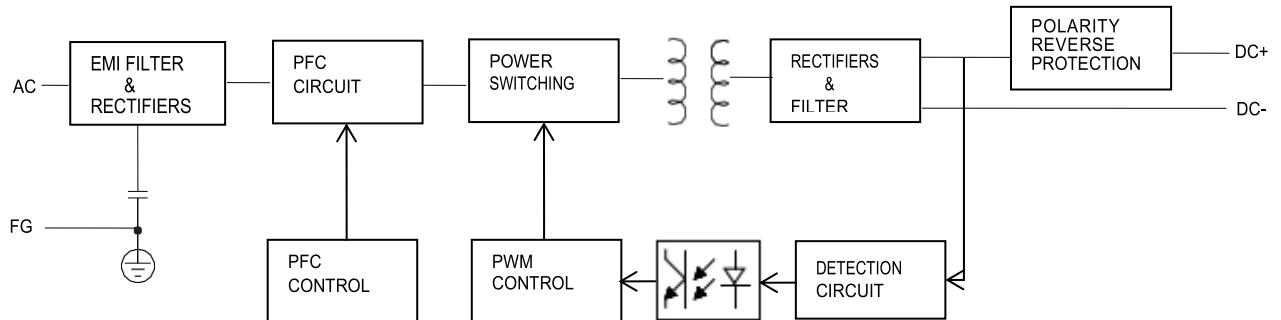
LiFePO4 battery charger (Only the adopted models are listed in table, for other output voltage please reach our sales)

MODEL		WP1800-288500	WP1800-360500	WP1800-432400	WP1800-576300	WP1800-720250	
OUTPUT	Charge voltage	28.8V±1%	36.0V±1%	43.2V±1%	57.6V±1%	72.0V±1%	
	Charge voltage range	20.0-28.8V	25.0-36.0V	30.0-43.2V	40.0-57.6V	50.0-72.0V	
	Charge current	200-240VAC	50.0A±10%	50.0A±10%	40A±10%	30A±10%	25.0A±10%
		100-120VAC	36.0A±10%	30.0A±10%	27.7A±10%	20.0A±10%	16.6A±10%
	Pre-charge current	20 % of CC (constant current)					
	Charge-end current	200-240VAC	≤5.0A ±10%	≤5.0A ±10%	≤4.0A ±10%	≤3.0A ±10%	≤2.5A ±10%
		100-120VAC	≤3.6A ±10%	≤3.0A ±10%	≤2.8A ±10%	≤2.0A ±10%	≤1.7A ±10%
	Rated power	200-240VAC	1440W	1800W	1728W	1728W	1800W
		100-120VAC	1036.8W	1080W	1196.64W	1152W	1195.2W
Recommended battery capacity Note.3		8S LFP/LIFEPO4 100 - 500Ah	10S LFP/LIFEPO4 100 - 500Ah	12S LFP/LIFEPO4 80 - 400Ah	16S LFP/LIFEPO4 60 - 300Ah	20S LFP/LIFEPO4 50 - 250Ah	
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					
	Efficiency (Typ.)	92%	92%	93%	93%	93%	
PROTECTION	Short circuit Note.5	Protection type : Shut down output					
	Over voltage	>3.7V*N					
	Reverse polarity	By internal relay					
	Over temperature	Shut down output, recovers automatically after temperature goes down					
ENVIRONMENT	Working temperature	-10 - +40℃ (Refer to " Derating Curve")					
	Working humidity	0 - 90% RH					
	Storage temperature, humidity	-40 - +70℃, 0 - 95% RH					
	Cooling	Fan convection					
	Vibration resistance	10 – 50Hz, 2G 10min. 1cycle, 60min. each along X, Y, Z axes					
SAFETY& EMC (Note.6)	Max. temperature rise	< 30℃ on casing					
	Hi-Pot Insulation	i/p to o/p: 3000V (1 min)					
	Safety standards	IEC62368					
	EMC Emission	Parameter	Standard			Test Level I Note	
		Conducted	EN55032 FCCPART15			Class B	
		Radiated	EN55032 FCCPART15			Class B	
		Harmonic Current	EN61000-3-2				
		Voltage Flicker	EN61000-3-3				
EMC IMMUNITY	EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11						
OTHERS	MTBF	30000H					
	Dimension	288*168*89mm (L*W*H)					
	Weight	4800g					
NOTE	1.Modification for charger specification may be required for different battery specification. Please contact battery vendor and Green digital power for details. 2.All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 3.This is Green suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation. 4.Derating may be needed under low input voltages. Please check the derating curve for more details. 5.This protection mechanism is specified for the case the short circuit occurs after the charger is turned on. 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."						

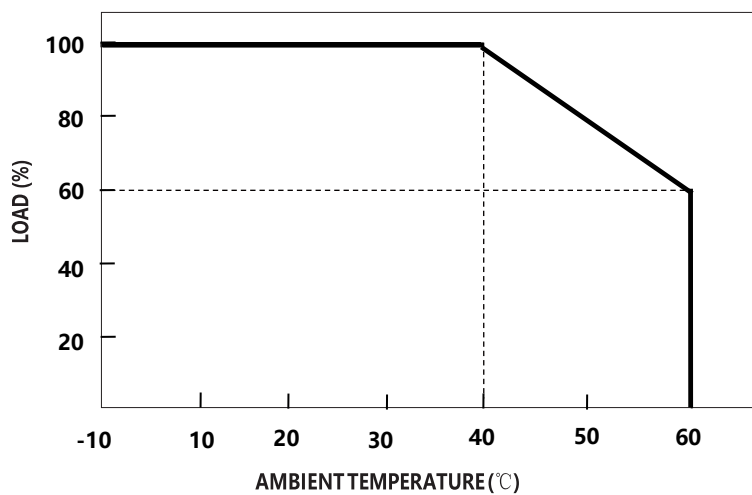
Lead-Acid battery charger (Only the adopted models are listed in table, for other output please reach our sales)

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		24V PB-ACID/GEL 200 - 500Ah	36V PB-ACID/GEL 160 - 400Ah	48V PB-ACID/FEL 120 - 300Ah	60V PB-ACID/GEL 100 - 240Ah	72V PB-ACID/GEL 80 - 200Ah	
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					
	Efficiency (Typ.)	92%	92%	93%	93%	93%	
PROTECTION	Short circuit Note.5	Protection type : Shut down output					
	Over voltage	>15.5V*N					
	Reverse polarity	By internal relay					
	Over temperature	Shut down output, recovers automatically after temperature goes down					
ENVIRONMENT	Working temperature	-10 - +40℃ (Refer to " Derating Curve")					
	Working humidity	0 - 90% RH					
	Storage temperature, humidity	-40 - +70℃, 0 - 95% RH					
	Cooling	Fan convection					
	Vibration resistance	10 – 50Hz, 2G 10min. 1cycle, 60min. each along X, Y, Z axes					
SAFETY& EMC(Note.6)	Max. temperature rise	< 30℃ on casing					
	Hi-Pot Insulation	i/p to o/p: 3000V (1 min)					
	Safety standards	IEC62368					
	EMC Emission	Parameter	Standard			Test Level I Note	
		Conducted	EN55032 FCCPART15			Class B	
		Radiated	EN55032 FCCPART15			Class B	
		Harmonic Current	EN61000-3-2				
		Voltage Flicker	EN61000-3-3				
	EMC IMMUNITY	EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11					
OTHERS	MTBF	30000H					
	Dimension	288*168*89mm (L*W*H)					
	Weight	4800g					
NOTE	1.Modification for charger specification may be required for different battery specification. Please contact battery vendor and Green digital power for details. 2.All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 3.This is Green suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation. 4.Derating may be needed under low input voltages. Please check the derating curve for more details. 5.This protection mechanism is specified for the case the short circuit occurs after the charger is turned on. 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."						

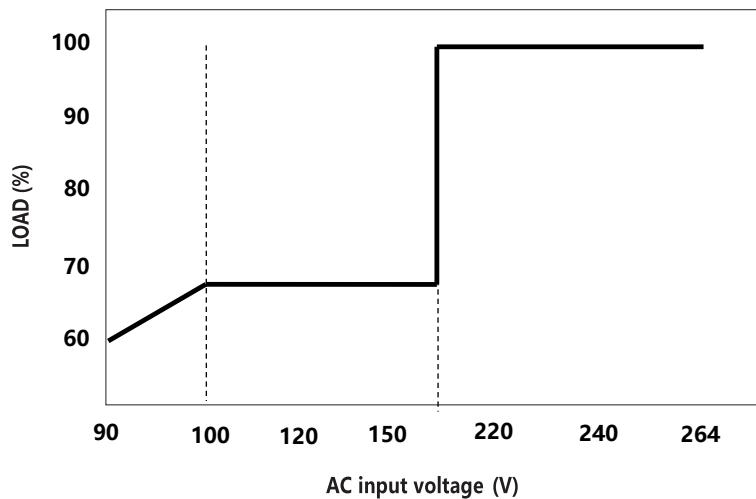
■ Block Diagram



■ Derating Curve

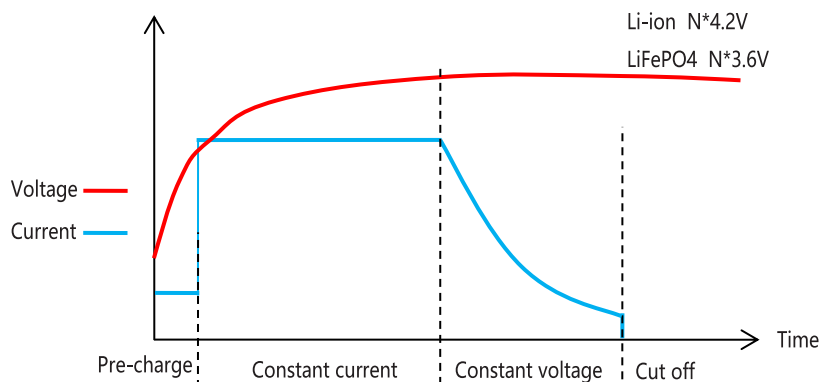


■ Static Characteristics

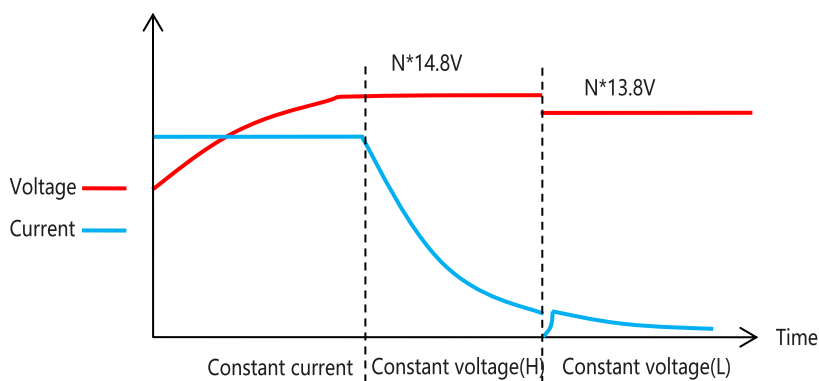


1.Charging Curve

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

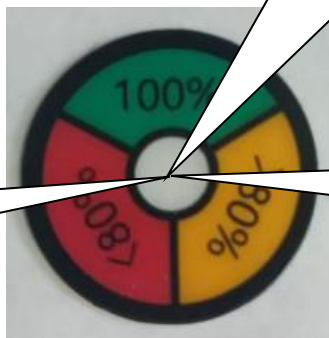


◎ 3 stage charging curve(Lead-Acid battery charger)



2.LED indication

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



Green ON: Full charged, or idle

Yellow ON: Charging, capacity >= 80%

■ Mechanical specification

