



■ 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 or 485 communication (Defined when order)
- Protection: Short circuit / Over voltage / Over temperature / Reverse polarity protection
- Waterproof and dustproof, IP67 class level

■ Applications

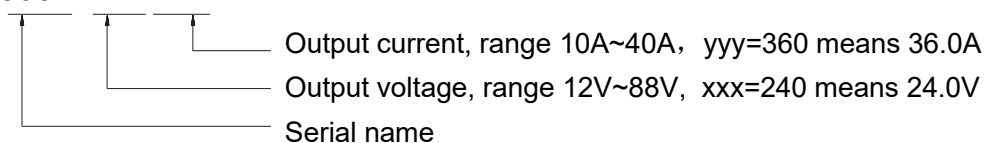
- Golf carts/ Buggy/Utility EV
- Electric forklift
- AGV/ Drone/ Robot
- Electric motorcycle/ tricycle
- Energy storage system
- Marina / Ship / Boat

■ Description

The WP800 series is an aluminum alloy housing waterproof IP67 charger with a rated output power 840W at 220-240VAC input and 600W at 100-120VAC input, with programmable 3 and 4 stages charging curves for 12V 24V 36V 48V 60V 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:

WP800-XXXYYY



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

MODEL		WP800-168350	WP800-294280	WP800-420200	WP800-588140	WP800-714115	WP800-840100	
OUTPUT	Charge voltage	16.8V±1%	29.4V±1%	42.0V±1%	58.8V±1%	71.4V±1%	84.0V±1%	
	Charge voltage range	10-16.8V	17.5-29.4V	25-42.0V	35-58.8V	42.5-71.4V	50-84V	
	Charge current	200-240VAC	35A±10%	28A±10%	20A±10%	14A±10%	11.5A±10%	10A±10%
		100-120VAC	30A±10%	20A±10%	14A±10%	10A±10%	8A±10%	7A±10%
	Pre-charge current	20% of CC (constant current)						
	Charge-end current	200-240VAC	≤3.5A ±20%	≤2.8A ±20%	≤2.0A ±20%	≤1.4A ±20%	≤1.1A ±20%	≤1.0A ±20%
		100-120VAC	≤3.0A ±20%	≤2.0A ±20%	≤1.4A ±20%	≤1.0A ±20%	≤0.8A ±20%	≤0.7A ±20%
	Rated power	200-240VAC	588W	823.2W	840W	823.2W	821.1W	840W
		100-120VAC	504W	588W	588W	588W	571.2W	588W
Recommended battery capacity Note.3	60 - 200Ah		40 - 150Ah	30 - 100Ah	20 - 80Ah	15 - 60Ah	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.)	6.8A@100VAC						
	Inrush current (Typ.)	Cold start 75A @230VAC						
	Standby input power	< 2.5W						
	Efficiency (Typ.)	90%	92%	93%	93%	93%	93%	
PROTECTION	Short circuit Note.5	Protection type : Shut down output						
	Over voltage	>4.35V*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						
		Max. temperature rise	< 30℃ on casing					
SAFETY & EMC (Note.6)	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*129.5*81.7mm (L*W*H)						
Weight		3750g						
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."							

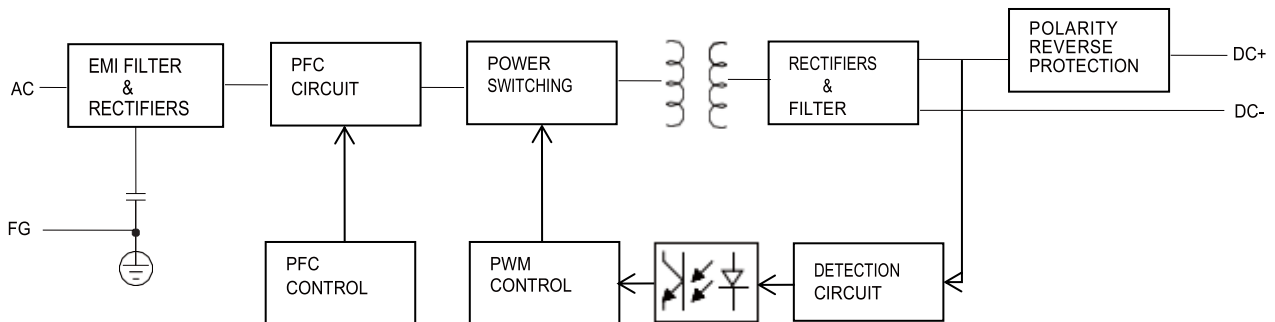
LiFePO4 battery charger (Only the adopted models are listed in table, for other output please reach our sales)

MODEL		WP800-144400	WP800-288280	WP800-360230	WP800-576140	WP800-720115	WP800-864095	
OUTPUT	Charge voltage	14.4V±1%	28.8V±1%	36.0V±1%	57.6V±1%	72.0V±1%	86.4V±1%	
	Charge voltage range	10-16.8V	20-28.8V	25-36.0V	40-57.6V	50-72.0V	60-86.4V	
	Charge current	200-240VAC	40A±10%	28A±10%	23A±10%	14A±10%	11.5A±10%	9.5A±10%
		100-120VAC	35A±10%	20A±10%	16A±10%	10A±10%	8A±10%	6.9A±10%
	Pre-charge current	20% of CC (constant current)						
	Charge-end current	200-240VAC	≤4.0A ±20%	≤2.8A ±20%	≤2.3A ±20%	≤1.4A ±20%	≤1.1A ±20%	≤0.95A ±20%
		100-120VAC	≤3.5A ±20%	≤2.0A ±20%	≤1.6A ±20%	≤1.0A ±20%	≤0.8A ±20%	≤0.7A ±20%
	Rated power	200-240VAC	576W	806.4W	828W	806.4W	828W	820.8W
		100-120VAC	504W	576W	576W	576W	576W	596.16W
Recommended battery capacity Note.3	60 - 200Ah		40 - 150Ah	30 - 100Ah	20 - 80Ah	15 - 60Ah	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.)	6.8A@100VAC						
	Inrush current (Typ.)	Cold start 75A @230VAC						
	Standby input power	< 2.5W						
	Efficiency (Typ.)	90%	92%	93%	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*129.5*81.7mm (L*W*H)						
	Weight	3750g						
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."							

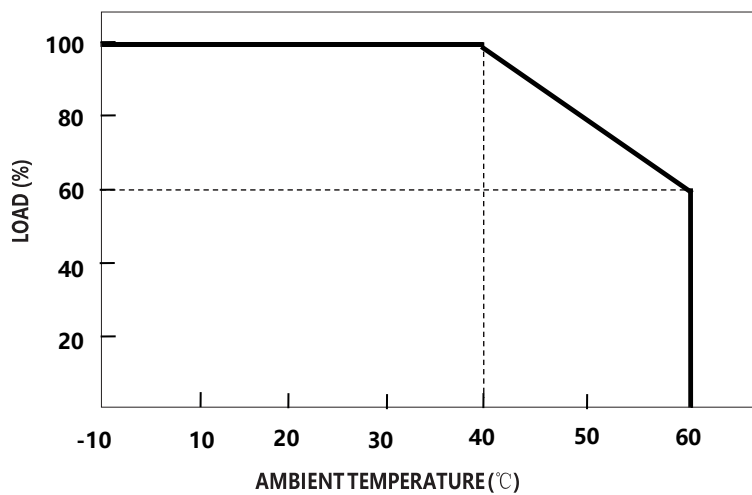
Lead-Acid battery charger (Only the adopted models are listed in table, for other output please reach our sales)

MODEL		WP800-148400	WP800-296280	WP800-444180	WP800-592140	WP800-740110	
OUTPUT	Charge voltage (High voltage)	14.8V±1%	29.6V±1%	44.4V±1%	59.2V±1%	74V±1%	
	Charge voltage range	10-14.8V	20-29.6V	30-44.4V	40-59.2V	50-74V	
	Float charge (Low voltage)	13.8V±1%	27.6V±1%	41.4V±1%	55.2V±1%	69V±1%	
	Charge current	200-240VAC	40A±10%	28A±10%	18A±10%	14A±10%	11A±10%
		100-120VAC	35A±10%	20A±10%	13A±10%	10A±10%	8A±10%
	Charge-end current	200-240VAC	≤8.0A ±20%	≤5.6A ±20%	≤3.6A ±20%	≤2.8A ±20%	≤2.2A ±20%
		100-120VAC	≤7.0A ±20%	≤4.0A ±20%	≤2.6A ±20%	≤2.0A ±20%	≤1.6A ±20%
	Rated power	200-240VAC	592W	828.8W	799.2W	828.8W	814W
		100-120VAC	518W	592W	577.2W	592W	592W
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.)	6.8A@100VAC					
	Inrush current (Typ.)	Cold start 75A @230VAC					
	Standby input power	< 2.5W					
	Efficiency (Typ.)	90%	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*129.5*81.7mm (L*W*H)					
	Weight	3750g					
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."						

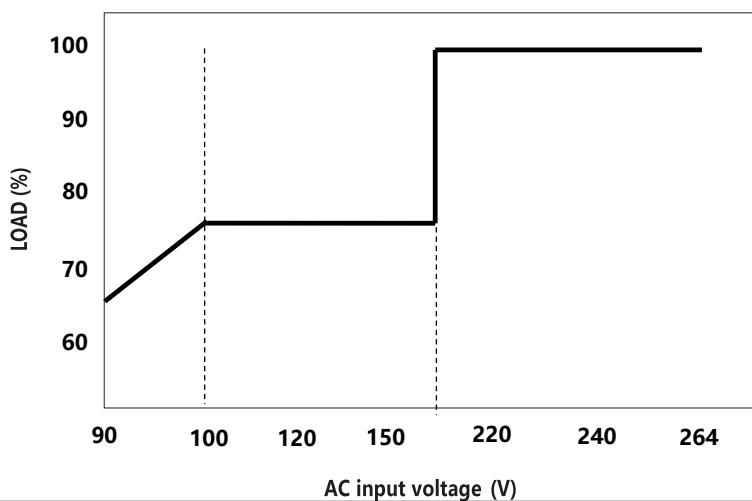
■ Block Diagram



■ Derating Curve

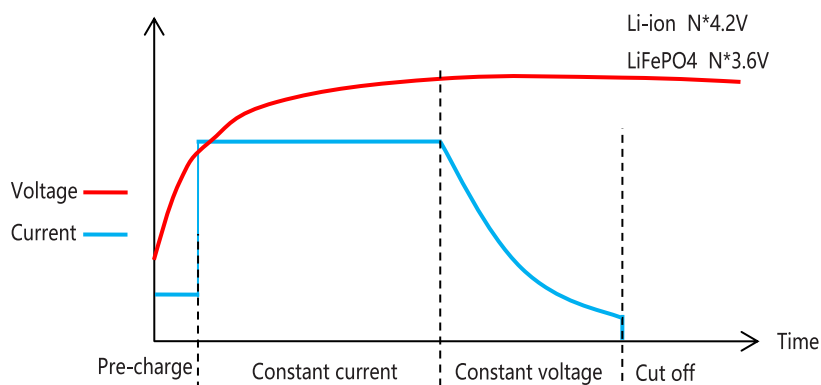


■ Static Characteristics

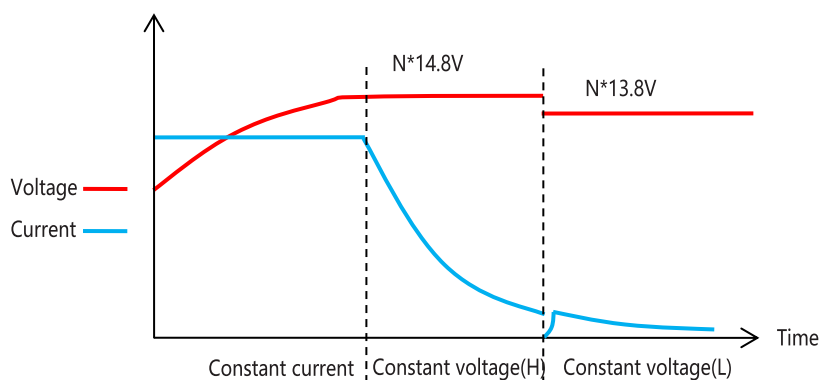


1.Charging Curve

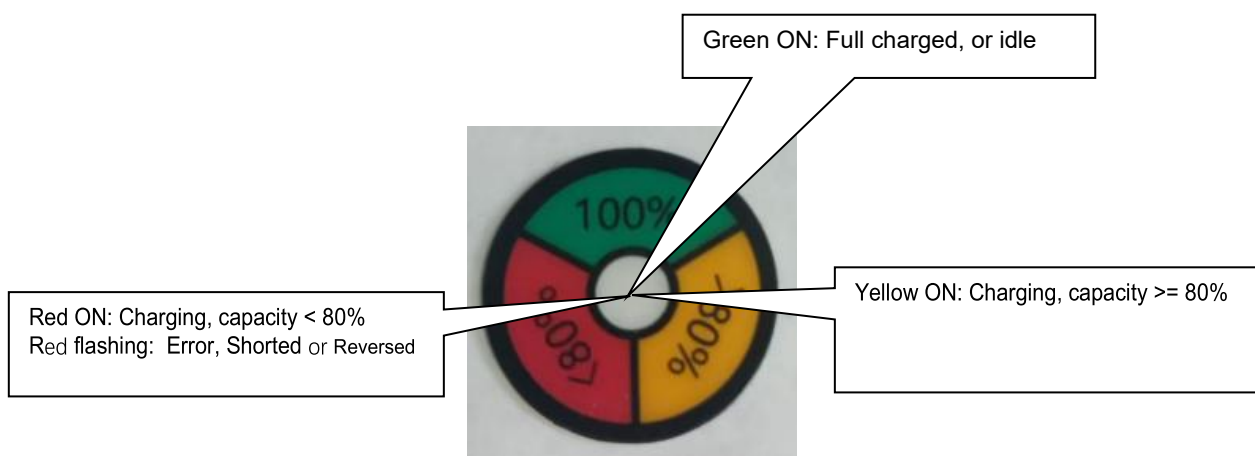
© 4 stage charging curve(Li-ion & LiFePO4 battery charger)



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



2.LED indication



■ Mechanical specification

