■ Features

•Charger for lithium batteries (Li-ion,LiFePO4and lithium manganese) and Lead-Acid batteries

•GaN-based solution, compact and lightweight, high efficiency and energy saving

•Built-in 4 stage charging curve(For Lithium batteries) and 3 stage charging curve(For Lead-Acid batteries)

•Universal AC input /(110 / 220Vac)

•Protection: Output Short Circuit / Output Over Voltage / Over Current / Battery Reverse Polarity Protection

•1 years warranty

■ Applications

•Radio system backup solution

•Electric scooter charger

•Surveillance system

•Electric motorcycle\Electric sweeper

■ Description

The GaN170 series is a single output, desktop AC to DC charger with a maximum power of 168W. It is compact, lightweight, and highly efficient. It features 4 stage and 3 stage charging modes suitable for Lithium batteries (Li-ion, $LiFePO_4$, Lithium Manganese) and Lead-Acid batteries (Gel, Liquid, AGM) respectively.

■ Model Encoding

GaN170-XXXYYY

Rated current

Rated voltage

Series name

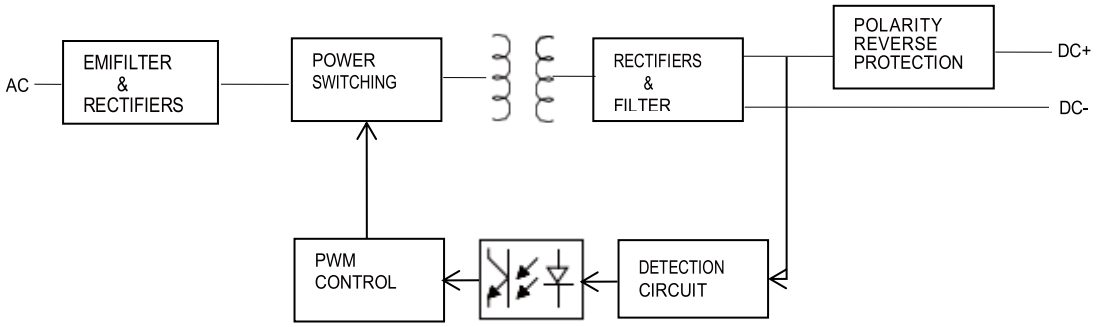
SPECIFICATION (Lead-Acid battery charger)

MODEL			GaN170-148100	GaN170-296056	GaN170-444037	GaN170-592028
OUTPUT	Charge voltage		14.8V±1%	29.6V±1%	44.4V±1%	59.2V±1%
	Charge voltage range		10.0-14.8V	20.0-29.6V	30.0-44.4V	40.0-59.2V
	Float charge		13.8V±1%	27.6V±1%	41.4V±1%	55.2V±1%
	Charge current	200-240VAC	10.0A±10%	5.6A±10%	3.7A±10%	2.8A±10%
		100-220VAC	8.0A±10%	4.9A±10%	3.3A±10%	2.5A±10%
	Charge-end current		≤2.0A ±20%	≤1.12A ±20%	≤0.74A ±20%	≤0.56A ±20%
	Rated power@AC220V		148W	165.76W	164.28W	165.76W
	Recommended battery capacity Note.3		60 - 100Ah	30- 60Ah	20 - 40Ah	15 - 30Ah
	Leakage current from battery (Typ.)		≤2mA			
Charging Indication	LED indication		Red: Charging. Green: Full or Idle			
INPUT	Rated input voltage		110 / 240VAC 50 / 60Hz			
	Input voltage range Note.4		100-120VAC / 200-240VAC			
	Power factor (Typ.)		PF>0. 98@AC100Vfull load			
	Input current (Typ.)		2.2A@100VAC			
	Inrush current (Typ.)		Cold start <75A @230VAC			
	Standby input power		<1W			
	Efficiency (Typ.)		93%	93%	94%	94%
PROTECTION	Short circuit Note.5		Yes			
	Over voltage		105% of the rated output voltage			
	Reverse polarity		Yes			
	Over temperature		Yes			
ENVIRONMENT	Working temperature		-10 - +40℃ (Refer to " Derating Curve")			
	Working humidity		0 - 90% RH			
	Storage temperature, humidity		-40 - +70℃, 0 - 95% RH			
	Cooling		Natural convection			
	Vibration resistance		10 - 50Hz, 2G 10min. 1cycle, 60min. each along X, Y, Z axes			
SAFETY&EMC (Note.6)	Max. temperature rise		< 40℃ on casing			
	Hi-Pot Insulation		i/p to o/p: 3000V (1 min)			
	Safety approval		IEC62368-1			
	EMC Emission		**Parameter**	**Standard**	**Test Level I Note**	
			Conducted	EN55032FCCPART15	Class B	
			Radiated	EN55032FCCPART15	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		114*68.4*29mm(L*W*H)			
	Weight		350g			

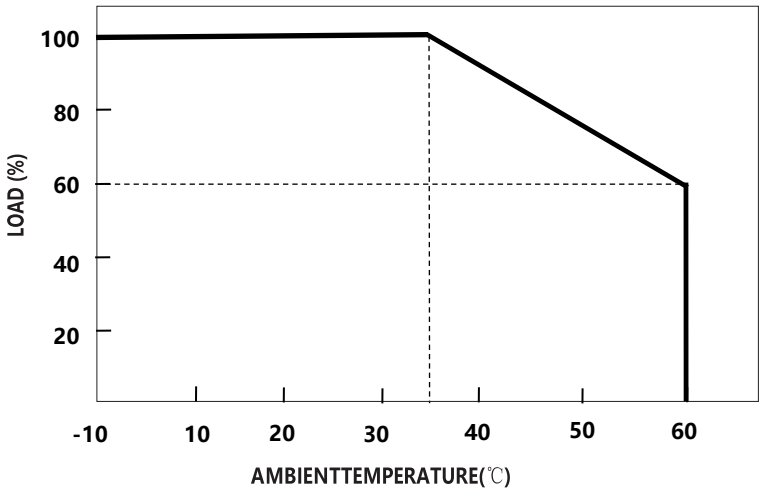
NOTE

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.

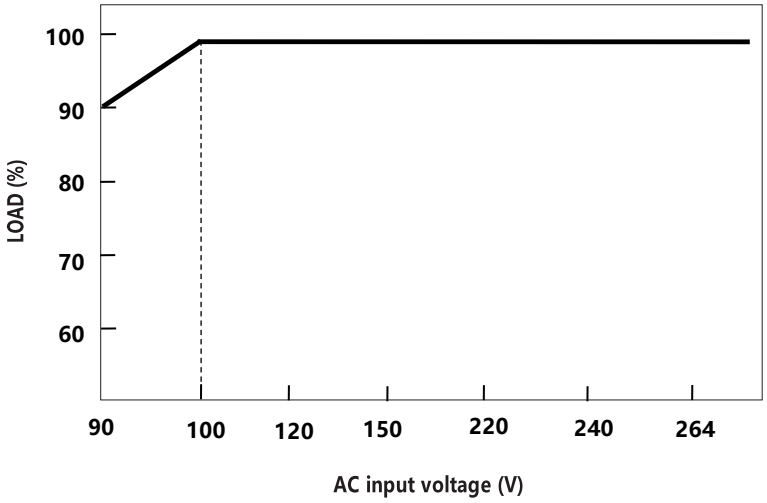
Block Diagram



Derting Curve

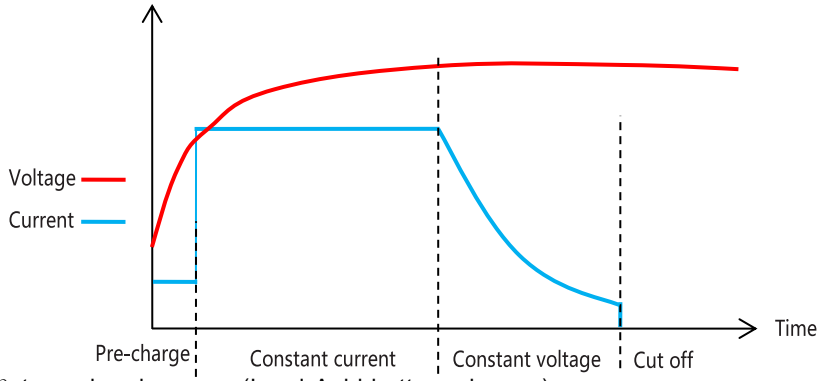


Static Characteristics

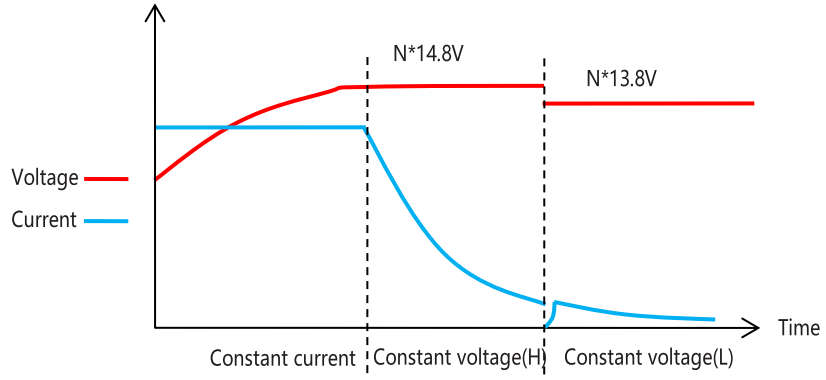


Charging Curve

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



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



Mechanical specification