■ Features

•Charger for lithium batteries (Li-ion,LiFePO4 and lithium manganese), Lead-Acid batteries and NIMH

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

•Universal AC input, wide range cover 90-264V

•Small size

•High efficiency, >90% at AC 90V input

•Protection: Short circuit, OCP, OVP & reverse polarity

• 1years warranty

■ Applications

•Power tools & Drones

•Electric scooter

•Surveillance system

•Consumer electronic devices

■ Description

GaN085 is a single output 85W AC/DC desktop type charger with 4 and 3 stage charging curve, The different curves are suitable for different batteries, such as Lead- acid batteries (gel, flooded and AGM) and Lithium batteries(Li-ion,LiFePO4 and Lithium manganese).

■ Mode Encoding

GaN085-XXXYYY

Rated current

Rated voltage

Series name

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

MODEL		GaN085-126060	GaN085-168050	GaN085-210040	GaN085-294028	GaN085-420020	GaN085-588015
OUTPUT	Charge voltage	12.6V±1%	16.8V±1%	21.0V±1%	29.4V±1%	42.0V±1%	58.8V±1%
	Charge voltage range	7.5-12.6V	10-16.8V	12.5-21.0V	17.5-29.4V	25-42.0V	35-58.8V
	Charge current	6.0A±10%	5.0A±10%	4.0A±10%	2.8A±10%	2.0A±10%	1.5A±10%
	Pre-charge current	1.2A±10%	1.0A±10%	0.8A±10%	0.56A±10%	0.4A±10%	0.3A±10%
	Charge-end current	≤0.6A ±20%	≤0.5A ±20%	≤0.4A ±20%	≤0.28A ±20%	≤0.2A ±20%	≤0.15A ±20%
	Rated power	75.6W	84W	84W	82.32W	84W	88.2W
	Recommended battery capacity Note.3	6 - 50Ah	5 - 40Ah	4- 30Ah	3 -20Ah	2 - 15Ah	1.5 - 12Ah
	Leakage current from battery (Typ.)	≤2mA					
CHARGE INDICATOR	LED indication	LED1 on:25% Capacity; LED1 - LED2 on: 50% Capacity; LED1 – LED3 on: 75% Capacity; LED1 – LED4 on: 100% Capacity; LED1 – LED4 flashing : error					
INPUT	Rated input voltage	100 - 240VAC 50 / 60Hz					
	Input voltage range Note.4	90 - 264VAC					
	Power factor (Typ.)	PF>0. 55@AC100V, full load					
	Input current (Typ.)	1.7A@100VAC					
	Inrush current (Typ.)	Cold start 75A @230VAC					
	Standby input power	<1W					
	Efficiency (Typ.)	93%	93.5%	93.5%	93%	92%	92%
PROTECTION	Short circuit	Yes					
	Over voltage	Yes					
	Reverse polarity	Yes					
	Over temperature	-					
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	CE/PSE/cETLus/ SAA/CB /FCC/UK					
	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	250g					

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.
7. AC Inlet is ICE320-C8, DC cord is 1.5m 2*18AWG wires, DC terminal is defined when order.

For LFP battery*(Only the adopted models are listed in table, for other output please reach our sales)*

MODEL		GaN085-144050	GaN085-288028	GaN085-576015
OUTPUT	Charge voltage	14.4V±1%	28.8V±1%	57.6V±1%
	Charge voltage range	10-14.4V	20-28.8V	40-57.6V
	Charge current	5.0A±10%	2.8A±10%	1.5A±10%
	Pre-charge current	1.0A±10%	0.56A±10%	0.3A±10%
	Charge-end current	≤0.5A ±20%	≤0.28A ±20%	≤0.15A ±20%
	Rated power	72W	80.64W	86.4W
	Recommended battery capacity Note.3	5 - 40Ah	3 - 20Ah	1.5 -12Ah
	Leakage current from battery (Typ.)	≤2mA		
CHARGE INDICATOR	LED indication	LED1 on:25% Capacity; LED1 - LED2 on: 50% Capacity; LED1 – LED3 on: 75% Capacity; LED1 – LED4 on: 100% Capacity; LED1 – LED4 flashing : error		
INPUT	Rated input voltage	100 - 240VAC 50 / 60Hz		
	Input voltage range Note.4	90 - 264VAC		
	Power factor (Typ.)	PF>0. 55@AC100V, full load		
	Input current (Typ.)	1.7A@100VAC		
	Inrush current (Typ.)	Cold start 75A @230VAC		
	Standby input power	<1W		
	Efficiency (Typ.)	93%	93%	92.5%
PROTECTION	Short circuit	Yes		
	Over voltage	Yes		
	Reverse polarity	Yes		
	Over temperature	-		
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	CE/PSE/cETLus/ SAA/CB /FCC/UK		
	EMC Emission	**Parameter**	**Standard**	**Test Level I Note**
		Conducted	EN55032 FCC PART15	Class B
		Radiated	EN55032 FCC PART15	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	250g		

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.
7. AC Inlet is ICE320-C8, DC cord is 1.5m 2*18AWG wires, DC terminal is defined when order.

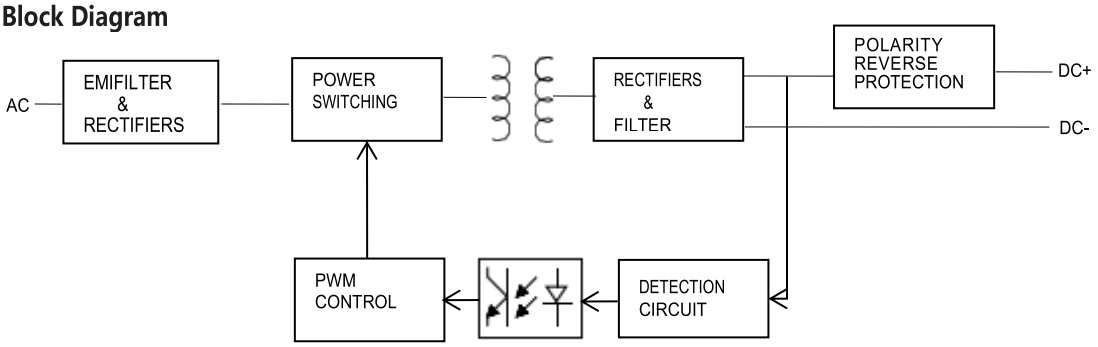
For Lead-Acid battery*(Only the adopted models are listed in table, for other output please reach our sales)*

MODEL		GaN085-148050	GaN085-296028	GaN085-444019	GaN085-592015
OUTPUT	Charge voltage (High voltage)	14.8V±1%	29.6V±1%	44.4V±1%	59.2V±1%
	Charge voltage range	10-14.8V	20-29.6V	30-44.4V	40-59.2V
	Float charge （Low voltage）	13.8V±1%	27.6V±1%	41.4V±1%	55.2V±1%
	Charge current	5.0A±10%	2.8A±10%	1.9A±10%	1.5A±10%
	Charge-end current	≤1.0A ±20%	≤0.56A ±20%	≤0.38A ±20%	≤0.3A ±20%
	Rated power	74W	82.88W	84.36W	88.8W
	Recommended battery capacity Note.3	20 - 55Ah	12 - 28Ah	10 - 20Ah	8 - 15Ah
	Leakage current from battery (Typ.)	≤2mA			
CHARGE INDICATOR	LED indication	LED1 on:25% Capacity； LED1 - LED2 on: 50% Capacity； LED1 – LED3 on: 75% Capacity； LED1 – LED4 on: 100% Capacity； LED1 – LED4 flashing : error			
INPUT	Rated input voltage	100 - 240VAC 50 / 60Hz			
	Input voltage range Note.4	90 - 264VAC			
	Power factor (Typ.)	PF>0. 55@AC100V, full load			
	Input current (Typ.)	1.7A@100VAC			
	Inrush current (Typ.)	Cold start 75A @230VAC			
	Standby input power	<1W			
	Efficiency (Typ.)	93%	93%	92%	92.5%
PROTECTION	Short circuit	Yes			
	Over voltage	Yes			
	Reverse polarity	Yes			
	Over temperature	-			
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	CE/PSE/cETLus/ SAA/CB /FCC/UK			
	EMC Emission	**Parameter**	**Standard**		**Test Level I Note**
		Conducted	EN55032 FCC PART15		Class B
		Radiated	EN55032 FCC PART15		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	250g			

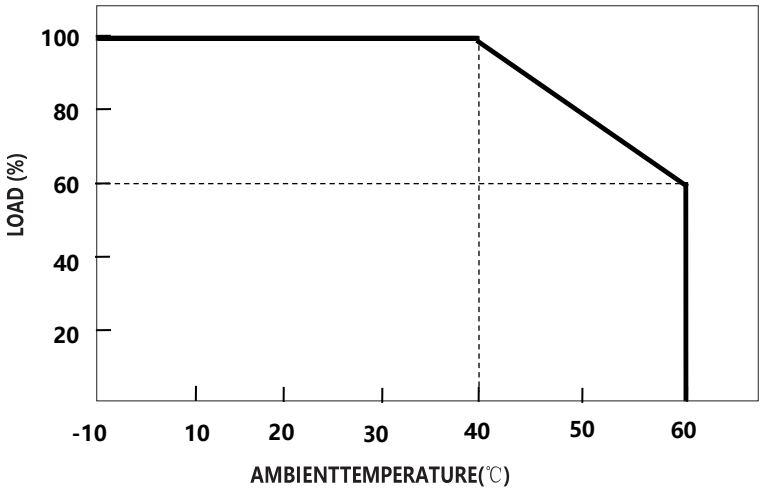
NOTE

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.
7. AC Inlet is ICE320-C8, DC cord is 1.5m 2*18AWG wires, DC terminal is defined when order.

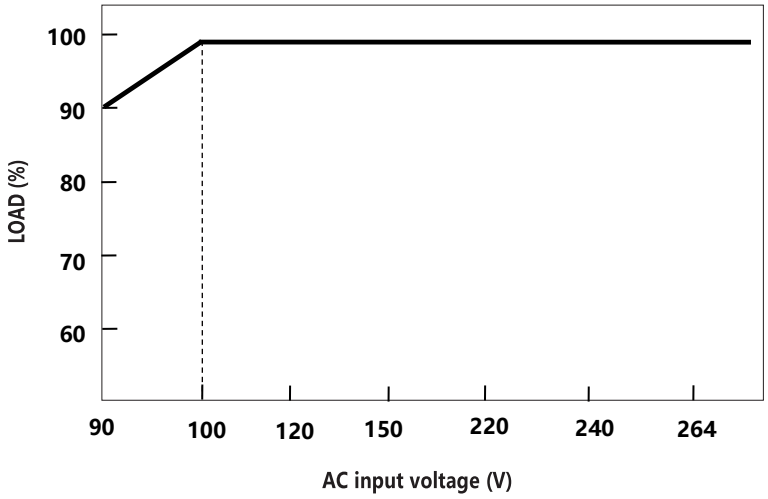
Block Diagram



Derating Curve

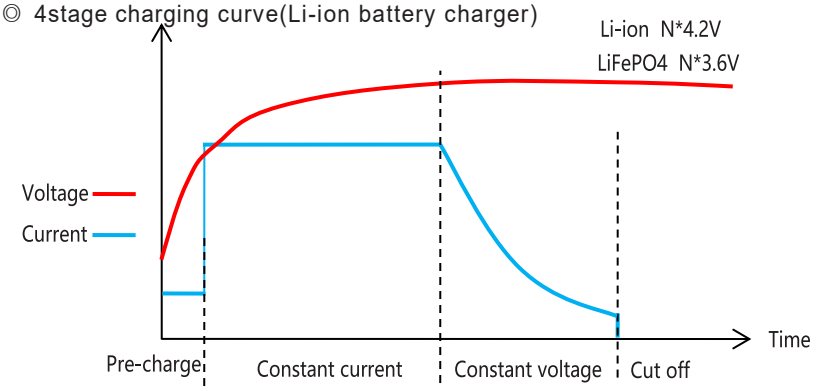


Static Characteristics

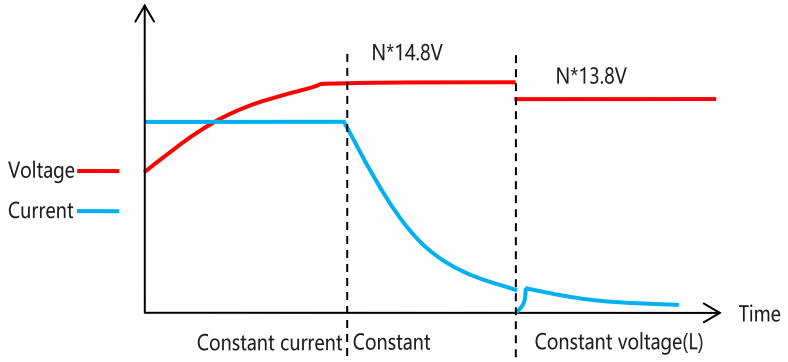
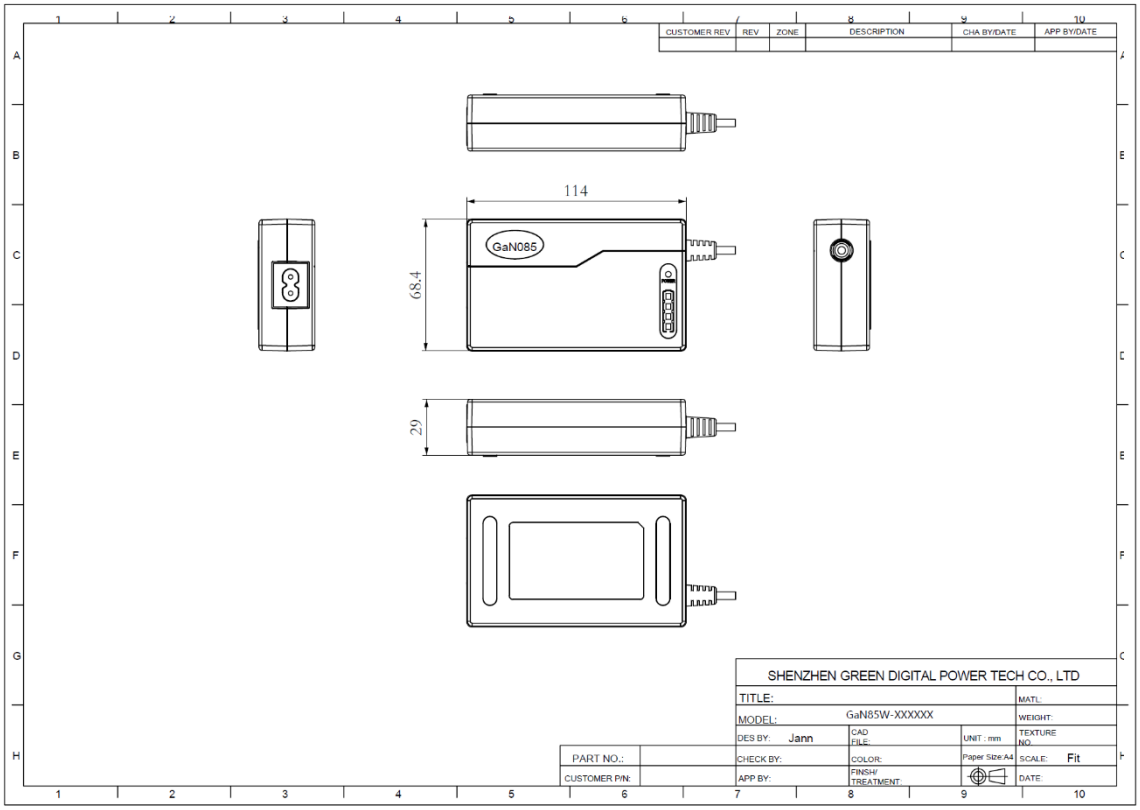


■ Charging Curve

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



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



■ Mecanical specification