

■ Features

- Charger for lithium batteries (Li-ion, LiFePO4 and Lithium Manganese) and Lead-Acid batteries
- Built-in 4 stage charging curve (for lithium batteries) and 3 stage charging curve (for lead-acid batteries)
- Universal AC input / Full range (90-264 VAC), max.1200 W output
- Built-in active PFC function, 94% efficiency
- Protections: Short circuit / Over voltage / Over temperature / Battery over voltage / Battery reverse polarity
- Communication port: CAN or RS485 (select one); LCD panel Optional

■ Applications

- EV, Robots and AGVs
- Energy storage system
- Industrial applications
- Electric motorcycle, Electric sweeper

■ Description

G1300 is a single-output, up-to-1200W AC/DC desktop charger with 3- and 4-stage charging curves. In addition to the embedded predefined charging curves, this default curve is programmable and thus able to accommodate different types of batteries, such as lead-acid batteries (Gel, AGM, and Flooded) and lithium batteries (Li-ion,LiFePO4 and Lithium Manganese). G1300 can be set to different charging voltage, charging current, and end-of-charge current values through the CAN bus, according to customers' own requirements. When used with the optional CAN meter, it can display the set voltage and current, the actual voltage and current, and the battery capacity.

■ Model serial P/N

G1300-XXXYYY

- Output current, 10A~40A，yyy=325 means 32.5A
- Output voltage, 20V~99V， xxx=252 means 25.2V
- Serial name

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

MODEL		G1300-294400	G1300-420280	G1300-546220	G1300-588200	G1300-840140
OUTPUT	Charge voltage	29.4V±1%	42.0V±1%	54.6V±1%	58.8V±1%	84.0V±1%
	Charge voltage range	17.5-29.4V	25.0-42.0V	32.5-54.6V	35-58.8V	50.0-84.0V
	Charge current @AC230V	40.0A±10%	28.0A±10%	22.0A±10%	20A±10%	14.0A±10%
	Pre-charge current	8A±10%	5.6A±10%	4.4A±10%	4.0A±10%	2.8A±10%
	Charge-end current	≤4A ±20%	≤2.8A ±20%	≤2.2A ±20%	≤2.0A ±20%	≤1.4A ±20%
	Max. output@AC120~240V	1200W	1200W	1200W	1200W	1200W
	Recommended battery capacity Note 3	40 - 400Ah	28 - 280Ah	22 - 220Ah	20 - 200Ah	14 - 140Ah
	Leakage current from battery (Typ.)	≤1mA				
CHARGE INDICATOR	Multi-color LED or LCD panel	Red LED flashing: Error Red LED on: Charging (battery < 80%) Yellow LED on: Almost full (80%–99%) Green LED on: Fully charged or standby LCD digital panel: Optional accessory				
COMMUNICATION FUNCTION	CAN / 485; CAN is default	Charging parameters (voltage, current, battery type) can be set via CAN port. User can use PC terminal or our LCD display panel accessary to set these parameters.				
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	< 4W				
	Efficiency (full load @ AC230V)	93%	94%	94%	94%	94%
PROTECTION	Short circuit Note 5	Protection type: Shut down output				
	Over voltage	>4.35V (single cell)				
	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	< 40℃ 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 Part 15			Class B
		Radiated	EN55032 FCC Part 15			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	30,000 h				
	Dimension	278 × 145 × 47.7 mm (L*W*H)				
	Weight	1800 g				

NOTE

1. Modification for charger specification may be required for different battery specification. Please contact battery vendor or 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 general suggested. Please consult your battery manufacturer about maximum charging current limitation.
4. Derating is needed at AC100~120V input or above 40℃ ambient. 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 needs to re-confirm that the whole system complies with the EMC directives.
7. CAN communication protocol is defined by user, or using factory default protocol.
8. LCD display/setting panel is an optional part when place order.

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

MODEL		G1300-288400	G1300-360330	G1300-432270	G1300-576200	G1300-720166
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 @AC230V	40.0A±10%	33.0A±10%	27A±10%	20.0A±10%	16.6A±10%
	Pre-charge current	8A±10%	6.6A±10%	5.4A±10%	4.0A±10%	3.32A±10%
	Charge-end current	≤4A ±20%	≤3.3A ±20%	≤2.7A ±20%	≤2.0A ±20%	≤1.66A ±20%
	Max. output@AC120~240V	1200W	1200W	1200W	1200W	1200W
	Recommended battery capacity Note 3	40 - 400Ah	33 - 330Ah	27 - 270Ah	20 - 200Ah	16 - 160Ah
	Leakage current from battery (Typ.)	≤1Ma				
CHARGE INDICATOR	Multi-color LED or LCD panel	Red LED flashing: Error Red LED on: Charging (battery < 80%) Yellow LED on: Almost full (80%–99%) Green LED on: Fully charged or standby LCD digital panel: Optional accessory				
COMMUNICATION FUNCTION	CAN / 485; CAN is default.	Charging parameters (voltage, current, battery type) can be set via CAN port. User can use PC terminal or our LCD display panel accessary to set these parameters.				
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	< 4W				
	Efficiency (full load @ AC230V)	93%	94%	94%	94%	94%
PROTECTION	Short circuit Note 5	Protection type: Shut down output				
	Over voltage	>3.7V (single cell)				
	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	< 40℃ 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 Part 15			Class B
		Radiated	EN55032 FCC Part 15			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	30,000 h				
	Dimension	278 × 145 × 47.7 mm (L*W*H)				
	Weight	1800 g				

NOTE

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2. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
3. This is general suggested. Please consult your battery manufacturer about maximum charging current limitation.
4. Derating is needed at AC100~120V input or above 40℃ ambient. 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.
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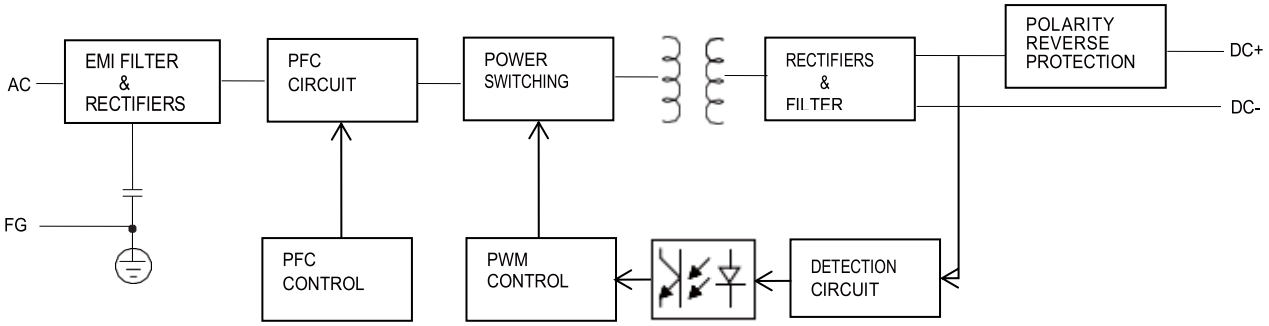
Lead-Acid battery chargers (Only the adopted models are listed in table, for other output please reach our sales)

MODEL		G1300-296400	G1300-444270	G1300-592200	G1300-740160	G1300-888130
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 @AC230V	40.0A±10%	27.0A±10%	20.0A±10%	16.0A±10%	13.0A±10%
	Charge-end current	≤8.0A ±20%	≤5.4A ±20%	≤4.0A ±20%	≤3.2A ±20%	≤2.6A ±20%
	Max. output@AC120~240V	1200W	1200W	1200W	1200W	1200W
	Recommended battery capacity Note 3	160 - 400Ah	100 - 300Ah	80 - 200Ah	60 - 160Ah	50 - 130Ah
	Leakage current from battery (Typ.)	≤1mA				
CHARGE INDICATOR	Multi-color LED or LCD panel	Red LED flashing: Error Red LED on: Charging (battery < 80%) Yellow LED on: Almost full (80%–99%) Green LED on: Fully charged or standby LCD digital panel: Optional accessory				
COMMUNICATION FUNCTION	CAN / 485; CAN is default	Charging parameters (voltage, current, battery type) can be set via CAN port. User can use PC terminal or our LCD display panel accessary to set these parameters.				
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	< 4W				
	Efficiency (full load @ AC230V)	93%	94%	94%	94%	94%
PROTECTION	Short circuit Note 5	Protection type: Shut down output				
	Over voltage	>15.5V (single cell)				
	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	< 40℃ on casing				
	Hi-Pot Insulation	i/p to o/p: 3000V (1 min)				
	Safety standards	IEC62368				
	EMC emission	**Parameter**	**Standard**			**Test Level / Note**
		Conducted	EN 55032 FCC Part 15			Class B
		Radiated	EN 55032 FCC Part 15			Class B
		Harmonic current	EN 61000-3-2			.....
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OTHERS	MTBF	30,000 h				
	Dimension	278 × 145 × 47.7 mm (L*W*H)				
	Weight	1800 g				

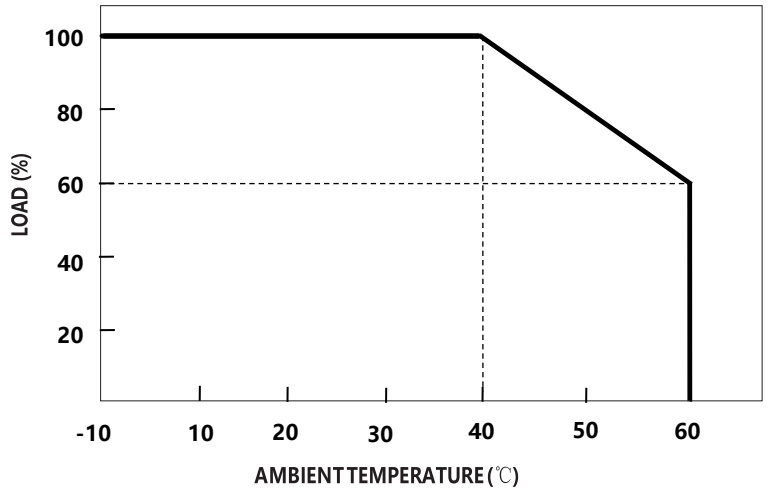
NOTE

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2. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.
3. This is general suggested. Please consult your battery manufacturer about maximum charging current limitation.
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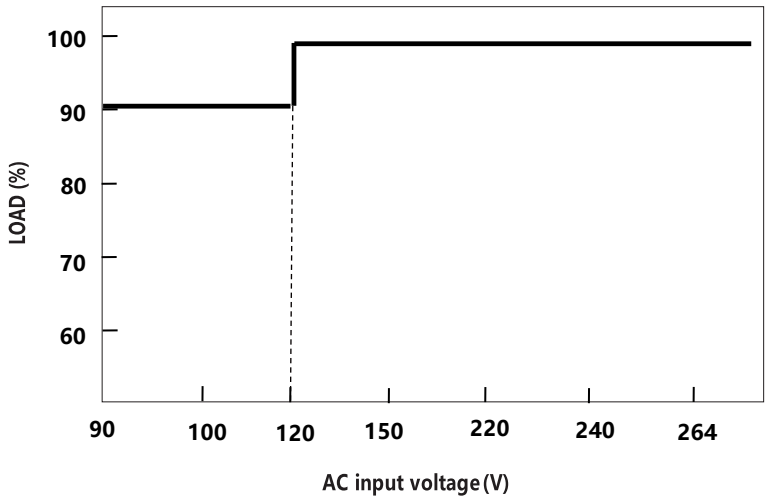
■ Block Diagram



■ Derating Curve for Ambient Temperature

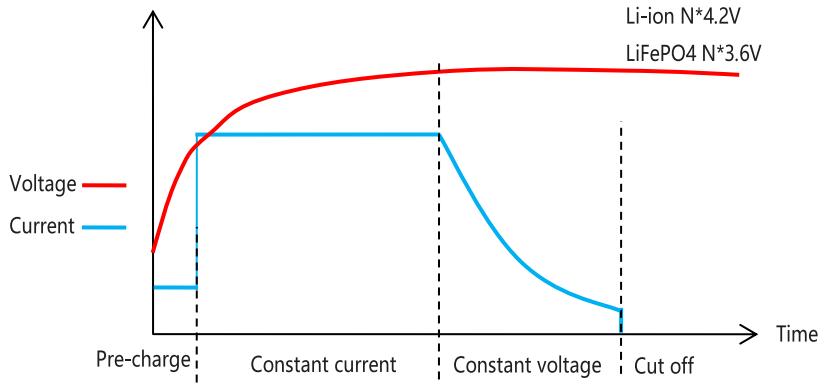


■ Derating Curve for AC Input Voltage

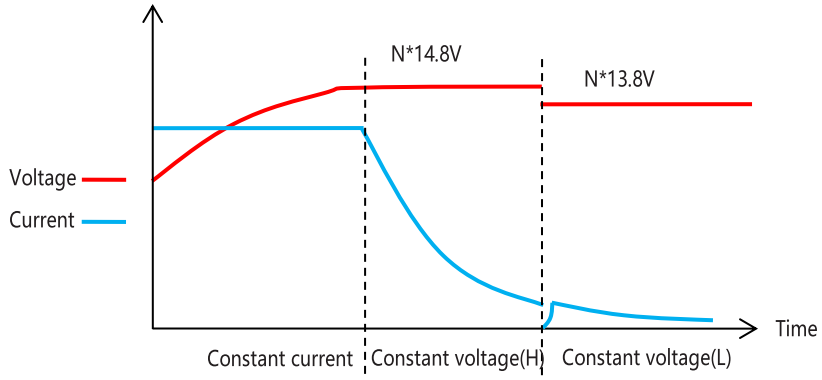


■ Charging Curve

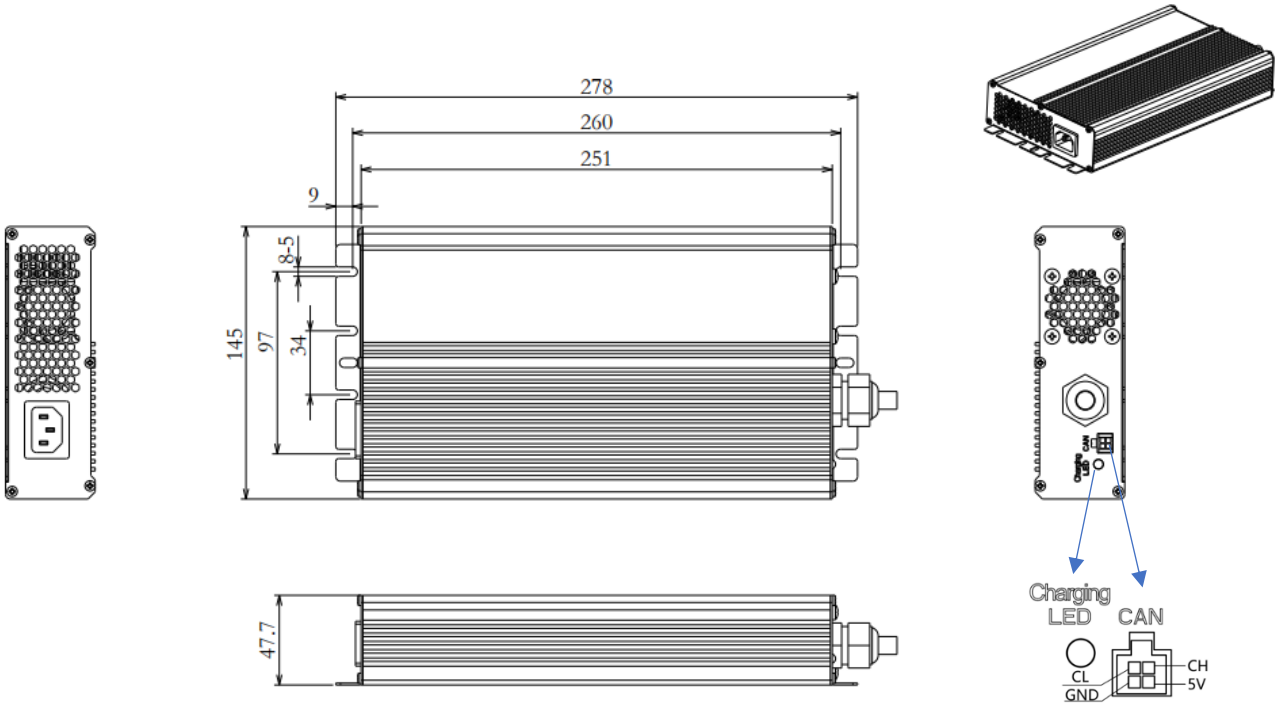
◎ 4 stage charging curve (Li-ion battery charger)

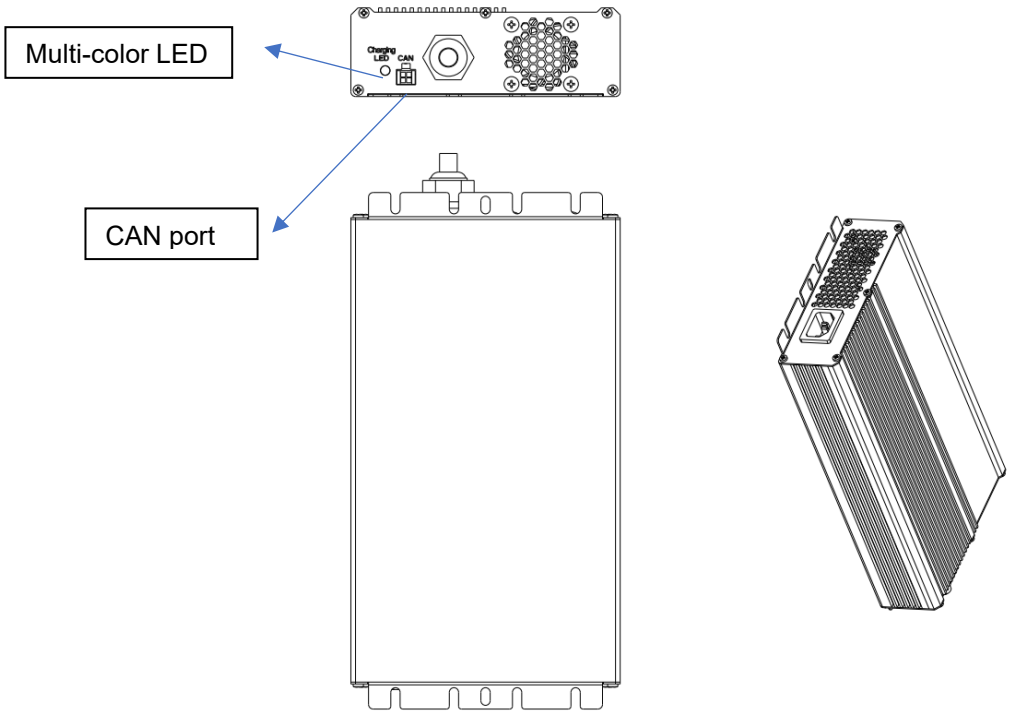


◎ 3 stage charging curve (Lead-Acid battery charger)



■ Mechanical Specification





■ Product & Optional CAN Meter

