



## ■ Features

- Charger for lithium batteries (Li-ion,LiFePO4and 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(90-264V~)
- Built- in active PFC function
- Protection: Short circuit / Over voltage /Over temperature /Battery over voltage / Battery reverse polarity protection
- 1 years warranty

## ■ Applications

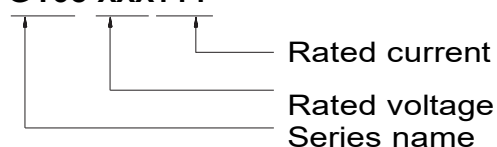
- Radio system backup solution
- Electric scooter charger
- Surveillance system
- Electric motorcycle\Electric sweeper

## ■ Description

G168 is a single output 168W AC/DC desktop type charger with 4 and 3 stage charging curve, suitable for lithium battery (lithium ion, lithium iron phosphate, lithium manganese) and lead-acid battery (colloid battery, liquid battery, AGM battery). When charging, the LED can indicate the battery capacity when charging.

## ■ Mode Encoding

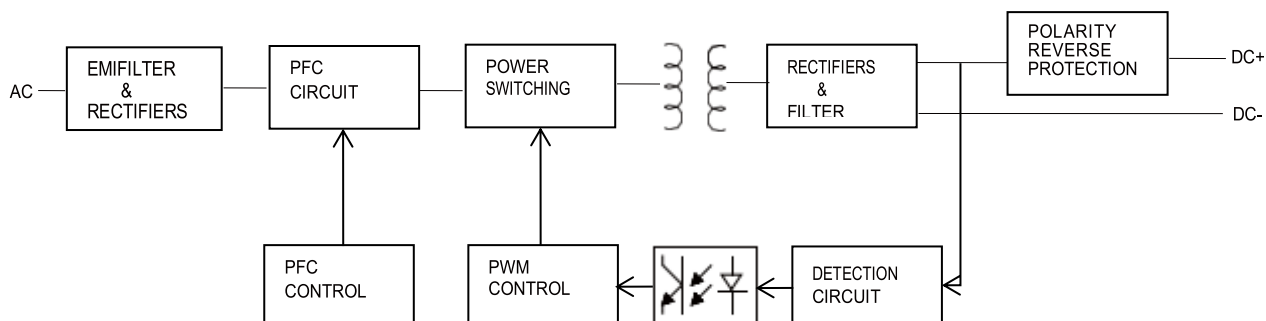
**G168-XXXYYY**



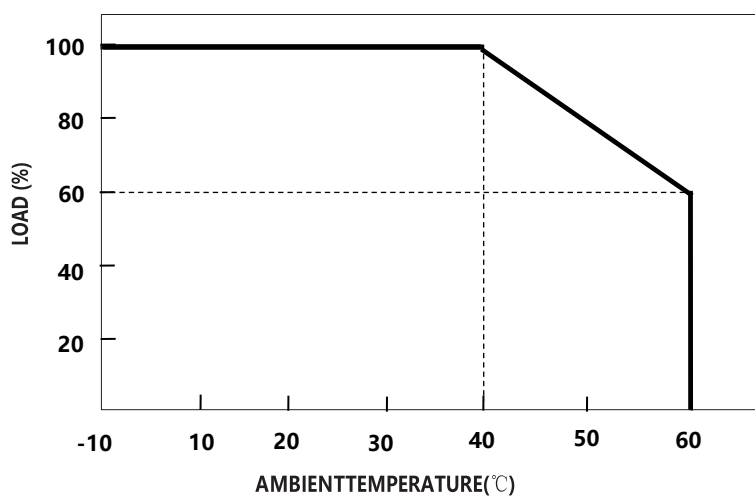
**SPECIFICATION(Li-Fe battery charger)**

| MODEL                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | G168-144110                                                        | G168-288057        | G168-360045 | G168-432038 | G168-576029       |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------|-------------|-------------|-------------------|
| OUTPUT                 | Charge voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 14.4V±1%                                                           | 28.8V±1%           | 36.0V±1%    | 43.2V±1%    | 57.6V±1%          |
|                        | Charge voltage range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 10.0-14.4V                                                         | 20.0-28.8V         | 25-36.0V    | 30-43.2V    | 40-57.6V          |
|                        | Charge current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 11.0A±7%                                                           | 5.7A±7%            | 4.5A±7%     | 3.8A±7%     | 2.9A±7%           |
|                        | Pre-charge current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 2.2A±7%                                                            | 1.14A±7%           | 0.9A±7%     | 0.76A±7%    | 0.58A±7%          |
|                        | Charge-end current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ≤1.1A ±10%                                                         | ≤0.57A ±10%        | ≤0.45A ±10% | ≤0.38A ±10% | ≤0.29A ±10%       |
|                        | Rated power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 158.4W                                                             | 164.16W            | 162W        | 164.16W     | 167.04W           |
|                        | Recommended battery capacity<br>Note.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 30 - 100Ah                                                         | 20 - 100Ah         | 10 - 50Ah   | 8 - 40Ah    | 6 - 30Ah          |
|                        | Leakage current from battery (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ≤1mA                                                               |                    |             |             |                   |
| CHARGING LED           | Red LED flashing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2Hz Error                                                          |                    |             |             |                   |
|                        | Green LED flashing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Idle                                                               |                    |             |             |                   |
|                        | Red LED on                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Charging                                                           |                    |             |             |                   |
|                        | Green LED on                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Full charged                                                       |                    |             |             |                   |
| INPUT                  | Rated input voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 100 - 240VAC 50 / 60Hz                                             |                    |             |             |                   |
|                        | Input voltage range Note.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 90 - 264VAC                                                        |                    |             |             |                   |
|                        | Power factor (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | PF>0.98@Full load, Input:115VAC ; PF>0.94 @Full load, Input:230VAC |                    |             |             |                   |
|                        | Input current (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2.2A@100VAC                                                        |                    |             |             |                   |
|                        | Inrush current (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Cold start 75A @230VAC                                             |                    |             |             |                   |
|                        | Standby input power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | < 1W                                                               |                    |             |             |                   |
| PROTECTION             | Efficiency (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 94%                                                                | 94%                | 94%         | 94%         | 94%               |
|                        | Short circuit Note.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Protection type : Shut down output                                 |                    |             |             |                   |
|                        | Over voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Protection type : Shut down output                                 |                    |             |             |                   |
|                        | Reverse polarity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Protection type : Shut down output                                 |                    |             |             |                   |
| ENVIRONMENT            | Over temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | -                                                                  |                    |             |             |                   |
|                        | 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,2G10min.1cycle,60min.eachalongX,Y,Zaxes                    |                    |             |             |                   |
| SAFETY&EMC<br>(Note.6) | Max. temperature rise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | < 40℃ on casing                                                    |                    |             |             |                   |
|                        | Hi-Pot Insulation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | i/p to o/p: 3000V (1 min)                                          |                    |             |             |                   |
|                        | Safety approval                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CE/PSE/SAA/FCC/CCC/cTUVus/CB/BS                                    |                    |             |             |                   |
|                        | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 175*72*40mm (L*W*H)                                                |                    |             |             |                   |
|                        | Weight                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 680g                                                               |                    |             |             |                   |
| NOTE                   | 1.Modification for charger specification may be required for different battery specification. Please contact battery vendor and Green digital power for details.<br>2.All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature.<br>3.This is Green suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation.<br>4.Derating may be needed under low input voltages. Please check the derating curve for more details.<br>5.This protection mechanism is specified for the case the short circuit occurs after the charger is turned on.<br>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. |                                                                    |                    |             |             |                   |

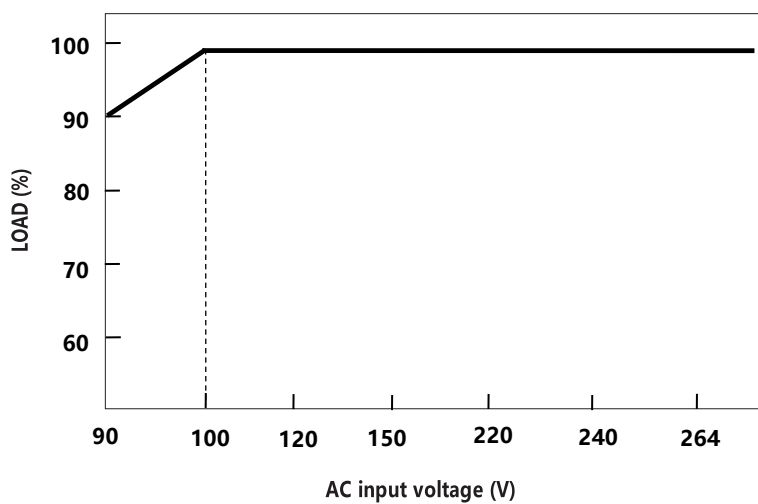
### ■ Block Diagram



### ■ Derating Curve

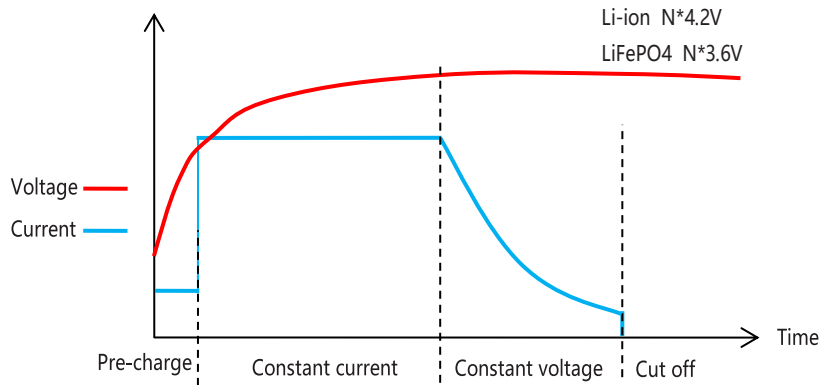


### ■ Static Characteristics

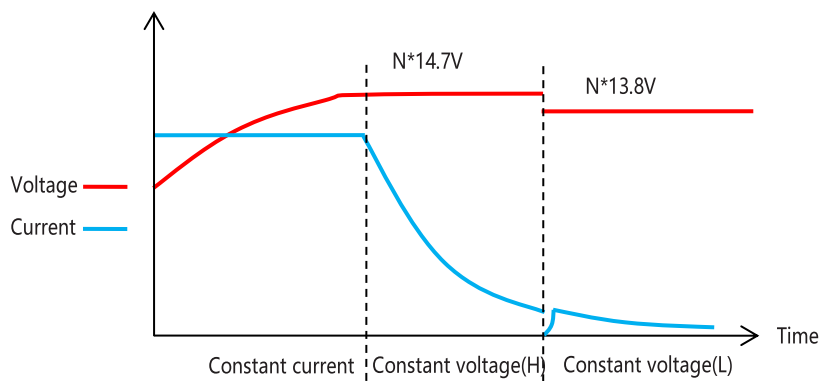


## ■ Charging Curve

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



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



■ Mechanical specification

