



■ 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 communication
- Protection: Short circuit / Over voltage / Over temperature / Reverse polarity protection
- Waterproof and dustproof, IP67 class level

■ Applications

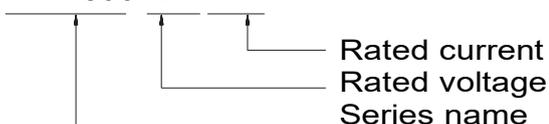
- Golf carts/ Buggy/Utility EV
- Electric forklift
- AGV/ Drone/ Robot
- Electric motorcycle/ tricycle
- Energy storage system
- Marina / Ship / Boat

■ Description

The WP1800 series is an aluminum alloy housing waterproof IP67 charger with a rated output power 1800W at 220-240VAC input and 1200W at 100-120VAC input, with programmable 3 and 4 stages charging curves for 48V 60V 72V 84V 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:

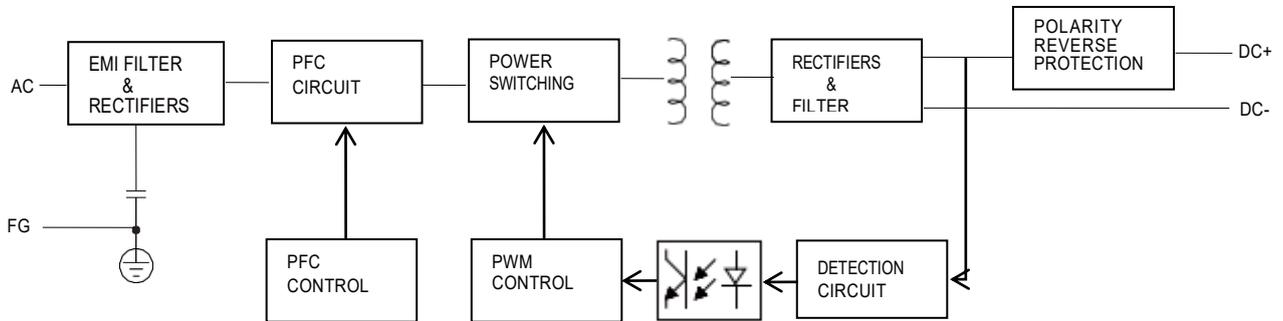
WP1800-XXXYYY



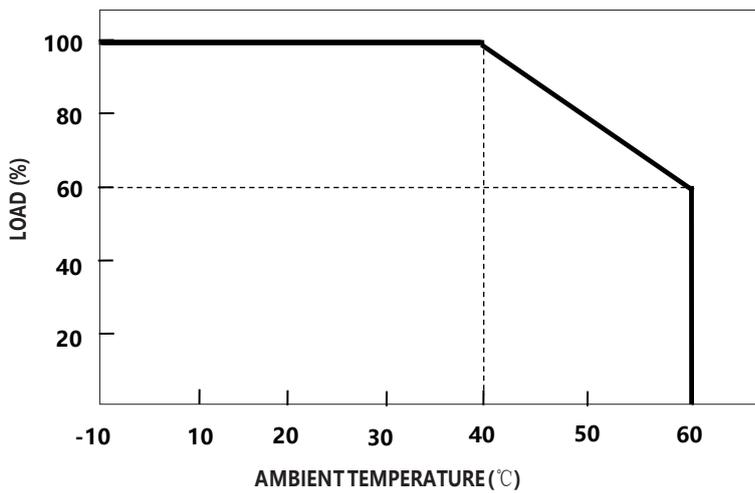
SPECIFICATION(Li-Fe battery charger)

| MODEL | | WP1800-288500 | WP1800-360500 | WP1800-432400 | WP1800-576300 | WP1800-720250 | |
|-------------------------------------|--|---|--------------------|---------------|---------------|-------------------|-------------|
| 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 | 200-240VAC | 50.0A±10% | 50.0A±10% | 40A±10% | 30A±10% | 25.0A±10% |
| | | 100-120VAC | 36.0A±10% | 30.0A±10% | 27.7A±10% | 20.0A±10% | 16.6A±10% |
| | Pre-charge current | 20 % of CC (constant current) | | | | | |
| | Charge-end current | 200-240VAC | ≤5.0A ±10% | ≤5.0A ±10% | ≤4.0A ±10% | ≤3.0A ±10% | ≤12.5A ±10% |
| | | 100-120VAC | ≤3.6A ±10% | ≤3.0A ±10% | ≤2.8A ±10% | ≤2.0A ±10% | ≤1.7A ±10% |
| | Rated power | 200-240VAC | 1440W | 1800W | 1728W | 1728W | 1800W |
| 100-120VAC | | 1036.8W | 1080W | 1196.64W | 1152W | 1195.2W | |
| 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.) | 14A@100VAC | | | | | |
| | Inrush current (Typ.) | Cold start 75A @230VAC | | | | | |
| | Standby input power | < 6W | | | | | |
| | Efficiency (Typ.) | 92% | 92% | 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°C (Refer to " Derating Curve") | | | | | |
| | Working humidity | 0 - 90% RH | | | | | |
| | Storage temperature, humidity | -40 - +70°C, 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°C 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 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 | 288*168*89mm (L*W*H) | | | | | |
| | Weight | 4800g | | | | | |
| NOTE | <p>1.Modification for charger specification may be required for different battery specification. Please contact battery vendor and Green digital power for details.</p> <p>2.All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>3. This is Green suggested range. Please consult your battery manufacturer for their suggestions about maximum charging current limitation.</p> <p>4.Derating may be needed under low input voltages. Please check the derating curve for more details.</p> <p>5. This protection mechanism is specified for the case the short circuit occurs after the charger is turned on.</p> <p>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."</p> | | | | | | |

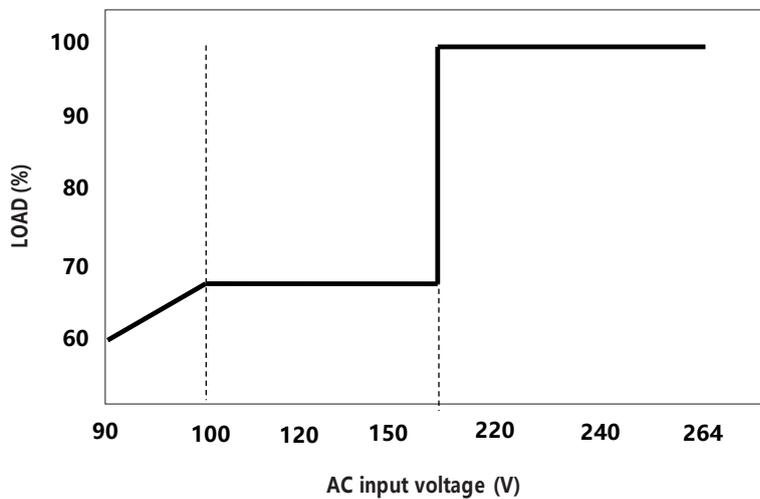
■ Block Diagram



■ Derating Curve

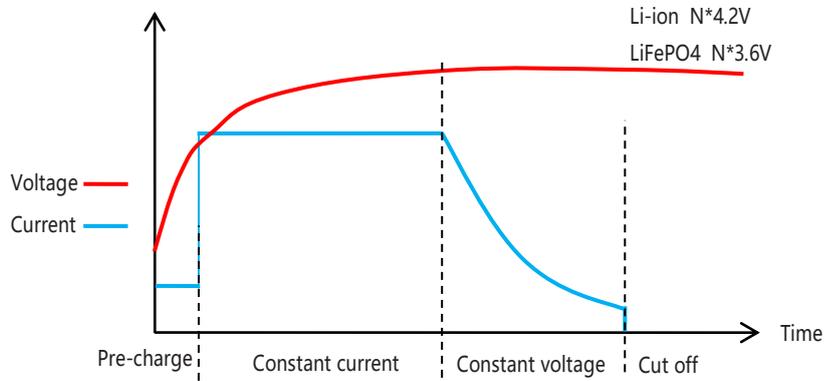


■ Static Characteristics

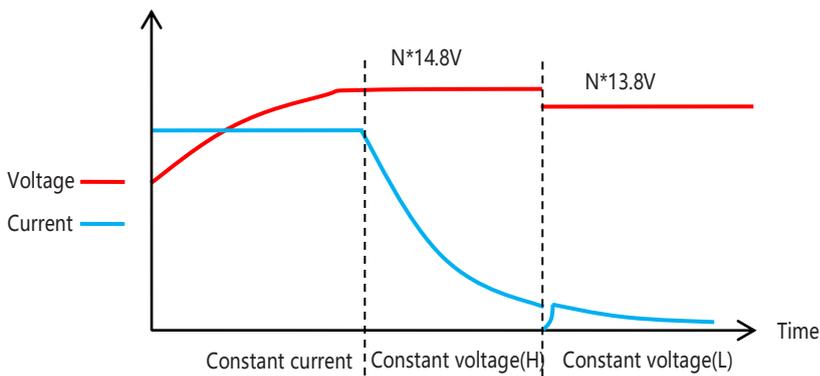


1.Charging Curve

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



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



2.LED indication

Green ON: Full charged, or idle

Yellow ON: Charging, capacity >= 80%

Red ON: Charging, capacity < 80%
Red flashing: Error, Shorted or Reversed

■ Mechanical specification

