### **300W Series IP67 Sealed Battery Charger Specification**

DESEN ADS series of high frequency PWM chargers have a compact and sealed structure design, they are suitable for flooded lead acid batteries, sealed lead acid batteries and Lithium ion batteries. They are used to cycle charge or floating charge batteries in electric cars, sightseeing vehicles, patrol vehicles, fork lifts, communication, AGV, electric power, boats, Lawn-Mowers, Agriculture Equipment, etc.

Active PFC and LLC new technology guarantee a good Power Factor and a very high efficiency. The reliable hardware protections and Impeccable charging strategies ensure a safe charging process.

Embedded max 5 kinds of charging curve can be changed over by IR remote controller.

| Model Name   | Nominal Output<br>Voltage(V) | Max Charging<br>Current (A) | Battery Type  |  |
|--|------------------------------|-----------------------------|---|--|
| ADS300-1212XXX   | 12                           | 12                          | <ul> <li>&gt; SLA : Sealed Lead-Acid ( AGM or GEL)</li> <li>&gt; FLA: Flooded Lead-Acid ( Wet)</li> <li>&gt; LCO: Lithium Cobalt Oxide(LiCoO2) - (3.60V nominal;<br/>range 3.0-4.2V/cell)</li> <li>&gt; LMO: Lithium Manganese Oxide (LiMn2O4) - (3.70V<br/>nominal; range 3.0-4.2V/cell)</li> <li>&gt; NMC: Lithium Nickel Manganese Cobalt Oxide<br/>(LiNiMnCoO2) (3.60V, 3.70V nominal; range 3.0-4.2V/cell)</li> <li>&gt; LFP: Lithium Iron Phosphate(LiFePO4)(3.20, 3.30V<br/>nominal range 2.5-3.65V/cell)</li> <li>&gt; NCA: Lithium Nickel Cobalt Aluminum Oxide<br/>(LiNiCoAlO2)(3.60V nominal; range 3.0-4.2V/cell)</li> <li>&gt; LTO: Lithium Titanate (Li2TiO3)(2.40V nominal; range<br/>1.8-2.85V/cell)</li> </ul> |  |
| ADS300-2410XXX   | 24                           | 10                          |   |  |
| ADS300-3607XXX   | 36                           | 7                           |   |  |
| ADS300-4805XXX   | 48                           | 5                           |   |  |
| ADS300-6004XXX   | 60                           | 4                           |   |  |
| <b>XXX</b> : Battany type (use SLA_ELA_LCO_indicate the model) |                              |                             |   |  |

#### **MODEL LIST**

**XXX**: Battery type (use SLA, FLA, LCO...indicate the model)

#### **KEY FEATURES**

- AC input voltage range: 85~265Vac; 45-65Hz
- AC input rated current: <3.3A@100VAC, 1.5A @ 220VAC
- Power Factor > 0.99
- Efficiency: 87% @100VAC, 92% @ 220VAC
- Noise level < 45dB
- Protection Level: IP67
- CAN bus with auxiliary 12Vdc supply, can extend three colored LEDs
- Charging protection below 0 °C for Lithium (LI) Chargers
- Temperature compensation of Lead Acid (LA) chargers
- Integrated die casting structure, pouring sealed inside the charger, good performance in vibration, active heating dissipation, high reliability and long life time, it can be adopted in hostile environment.

#### **PROTECTION FUNCTIONS**

| Over current protection            | Yes  |  |
|------------------------------------|--|--|
| AC Input under voltage protection  | When AC voltage <150Vac, the charger will switch off             |  |
| Output short circuit protection    | Yes, will automatic resume after short is removed                |  |
| Battery reversed protection        | yes  |  |
| No-load protection                 | yes  |  |
|                                    | The charger must be able to operate up to 45°C and will de-rate  |  |
|                                    | the charge current linearly to 50% when reaching 60°C. When      |  |
| Over temperature                   | the case reaching >65°C the charger is allowed to stop, when the |  |
|                                    | temperature falls, the charger automatically resumes. No         |  |
|                                    | defects at high temperatures                                     |  |
|                                    | For the lead-acid charger the NTC is used for temperature        |  |
|                                    | compensation at -4mV/°C per 2V cell;                             |  |
| Temperature compensation           | the length of NTC cable is 1 meter                               |  |
|                                    | For the Lithium charger the external temperature sensor          |  |
|                                    | is used to prevent charging < 0 °C ambient temperature           |  |
| Fan cooling                        | The Fan rotates at charging and stops after fully charged        |  |
| Fully charged automatic disconnect | Only for Lithium version by internal relay                       |  |
| Fault LED indication               | Yes, see chapter LED indicators                                  |  |

#### SAFETY AND ENVIRONMENT

| Safety test AC to DC        | ≤20mA@2000Vac/1min                        |  |
|-----------------------------|---|--|
| Safety test AC to CASE      | ≤20mA@2000Vac/1min                        |  |
| Safety test DC to CASE      | ≤20mA@1000Vac/1min                        |  |
| Insulation Resistance test  | AC to CASE > 100MΩ/DC 500V                |  |
| Working ambient temperature | -20+45°C ; 4560°C linear de-rating to 50% |  |
| Storage temperature         | -40+80°C                                  |  |
| Humidity                    | 2090 % RH                                 |  |

#### LED INDICATORS

| LED Indication Label    | For LI Battery                                   | For LA Battery            |
|-------------------------|--|---------------------------|
| Non Load Status         | Red and Green LED cross flash                    |                           |
| Battery Capacity Status | Red LED flash per second, to show capacity < 80% |                           |
|                         | Yellow LED flash per second                      | l, to show capacity> 80%  |
|                         | Green LED flash per second,                      | , to show capacity = 100% |
| Fault Status            | Over-volt/current protection: flash R-G-R        |                           |
|                         | Ambient temperature too h                        | igh or low: flash R-G-R-G |
|                         | Over temperature: flash G-F                      | R                         |
|                         | Output under-voltage: flash                      | ) R-G                     |
|                         | Input AC voltage abnormal:                       | flash R-G-R-G-R           |
|                         | Other faults: flash G-R-G                        |                           |

Over 15 Years Power Supply and Battery Charger Design and Manufacturing Experience

Fully charged

Green LED light

#### GENERAL

| Dimension(mm)     | 204.5x123x64.5                                |
|-------------------|---|
| N.W(kg)           | 1.5   |
| G.W(kg)           | 1.8   |
| Input             | 0.75 m2 AC cable with customized AC plug      |
| Output            | 2.5 m2 with Grey SB50 or customized connector |
| Installation Type | Portable or On-board installation             |
| Warranty (Year)   | 2   |

#### DIMENSIONS



#### **USER ATTENTION**

- Read these instructions and warnings before use.
- The Charger must be used within Operating Ambient Temperature range -20~60°C and humidity of < 90%</li>
- Do not place the charger outside, but always in a space that has some protection from outside weather influences
- When the charger is installed, a minimum of 20 mm space all around the charger is needed.
- Do not place the charger in a small not vented space; the charger will run hot.
- The Charger must be yearly maintained, the air-flow slot which under the green plate must not be blocked, all dust and dirt substances must be cleaned. Check if the fan is operating properly during charging

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- Make sure the wires are placed in such a way that they cannot be damaged easily.
- If the charger is used for electric vehicles like cars or boats, the interlock connection can be used to prevent the propulsion motor from starting during charge
- The Lithium Battery must have a BMS protection with balancing the cells
- The Lithium version of the charger will not charge below 0  $^{\circ}$ C.
- Place the NTC temperature sensor close to the battery
- Never charge dead or damaged batteries
- Do not attempt to disassemble the charger