

ONBOARD CHARGERS

MODEL:ST-LF-144-46



Solterra Technologies Private Limited designs and manufactures robust power electronics for electric mobility, traction and energy storage applications, offering on-board and off-board chargers, power modules, inverters, communication controllers and auxiliary DC-DC systems engineered for demanding environments. This ST-LF-144-46 onboard charger delivers 6600W with 46A output current for 144V battery systems, adopting advanced high-power conversion technology specifically designed for seamless ultra-high-voltage vehicle integration with maximum charging efficiency. It has the characteristics of active power factor correction, high efficiency, high reliability, intelligent control and robust design optimized for demanding onboard automotive applications.

The charger adopts intelligent forced cooling thermal management technique with advanced multi-stage cooling solutions, achieving high power density with optimized thermal performance ideal for high-power vehicle integration. It has the functions of comprehensive battery management system communication, enhanced ultra-high-voltage protection features, and sophisticated adaptive charging algorithms to ensure safe and efficient onboard charging operations.

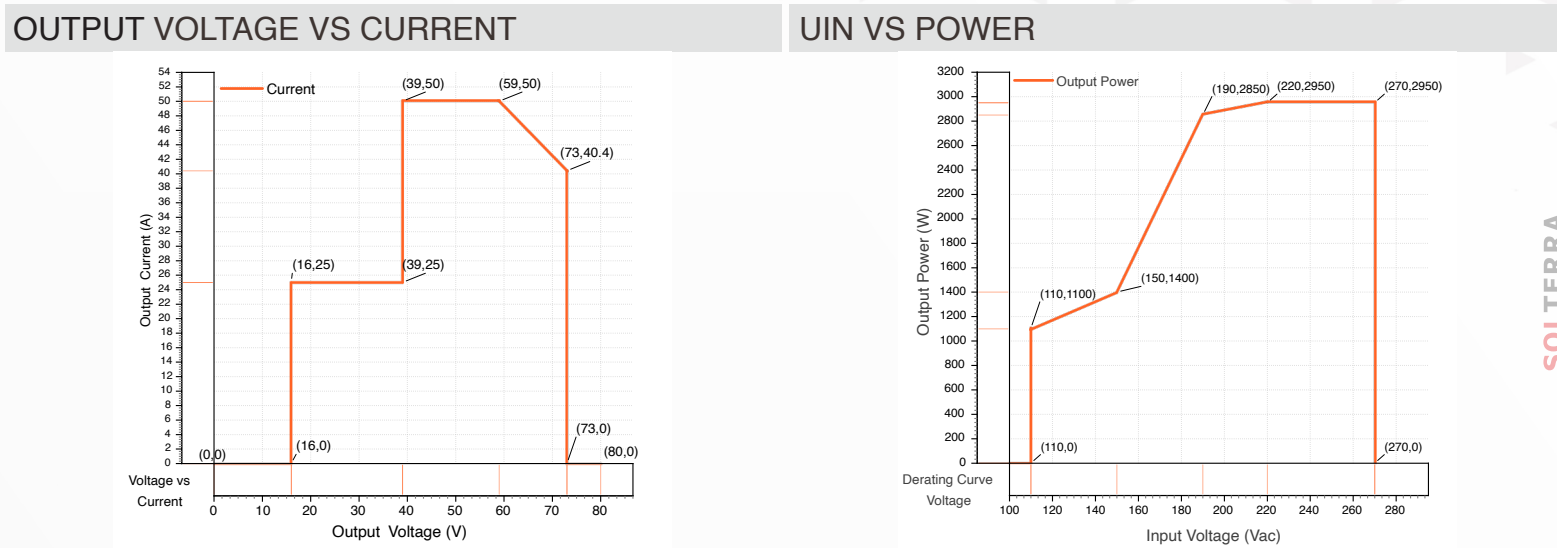
| MAIN ATTRIBUTES        |                             | AC INPUT ATTRIBUTES      |                |
|------------------------|-----------------------------|--------------------------|----------------|
| Max Output Power       | 6600W                       | AC Input Voltage Range   | 90Vac~265Vac   |
| Peak Efficiency        | ≥94%                        | Full Power Voltage Range | 90Vac~265Vac   |
| Voltage Range          | 95V - 202V                  | Input Frequency          | 47Hz~63Hz      |
| CP Mode Output Current | 46A                         | Input Current            | ≤32A           |
| MTBF                   | 150000 hours                | Input Inrush             | ≤48A           |
| Voltage Regulation     |                             | Power Factor             | ≥0.98 @ ≥3300W |
| Current Regulation     |                             | THDi                     |                |
| Topology               |                             | Input Surge Rating       |                |
| Battery Type           | 144V lead acid battery pack | Idle Consumption         | ≤5W            |

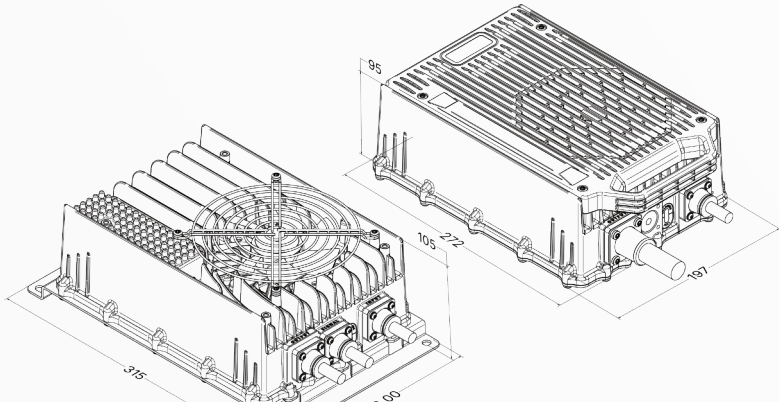
| PROTECTIONS                                  |                                                                                            |
|----------------------------------------------|--------------------------------------------------------------------------------------------|
| Input Under/Over Voltage                     |                                                                                            |
| Input Overcurrent                            |                                                                                            |
| Output Over Voltage                          | Stop output when exceed the highest voltage ±5V                                            |
| Output Overcurrent                           |                                                                                            |
| Output Short Circuit                         | Stop output                                                                                |
| Output Reverse Polarity & No Load Protection |                                                                                            |
| Automatic Shutdown                           |                                                                                            |
| Over Temperature Protection                  | Power start to decrease when internal temperature rise to 85°C, shut off when rise to 90°C |

Disclaimer: The information and specifications set out in this datasheet are provided for general reference purposes only and do not constitute a guarantee of performance or suitability for any particular application. Actual product performance may vary depending on the specific application, usage conditions, and environmental factors. All product specifications and related information are subject to change, modification, or withdrawal at any time without prior notice. The manufacturer assumes no liability arising from the use of this datasheet or reliance on the information contained herein. It is the responsibility of the system designer/integrator to validate the product in the target application and ensure compliance with all applicable standards and regulations.



| FEATURES                                                                |  | SAFETY                            |                           |
|-------------------------------------------------------------------------|--|-----------------------------------|---------------------------|
| Support UDS diagnosis, with CAN wake-up function                        |  | Isolation Levels (Input - Output) | Basic insulation: 2000VAC |
| Full-sealed process, can reliably work in the temperature of -40°C~60°C |  | Isolation Levels (Input - Shell)  | Basic insulation: 2000VAC |
| Built-in thermal sensor, shut off when temperature up to 90°C           |  | Isolation Levels (Output - Shell) | Basic insulation: 1000VAC |
| Protection level with IP67                                              |  | Insulation resistance             |                           |
|                                                                         |  | Drop Resistance                   |                           |



| DIMENSIONS                                                                            |  | MECHANICAL       |                                   |
|---------------------------------------------------------------------------------------|--|------------------|-----------------------------------|
|  |  | Dimensions (mm)  | 312.8 (L)*268.36 (W)*111.2 (H) mm |
|                                                                                       |  | IP Rating        | IP67                              |
|                                                                                       |  | Weight           | 8kg (17.6lb)                      |
|                                                                                       |  | Cooling Method   | Fan-cooled                        |
|                                                                                       |  | Number of Ports  |                                   |
|                                                                                       |  | Mounting Options |                                   |
|                                                                                       |  | Enclosure Type   |                                   |
|                                                                                       |  | Connectors       |                                   |
|                                                                                       |  | Encapsulant      |                                   |

| ENVIRONMENTAL         |                                       | REGULATORY |  |
|-----------------------|---------------------------------------|------------|--|
| Operating Temperature | -40°C~60°C                            |            |  |
| Storage Temperature   | -40°C~105°C                           |            |  |
| Altitude              | ≤5000m                                |            |  |
| Vibration & Shock     | 10~25Hz swing 1.2mm, 25–500Hz 30m/S 2 |            |  |
| Audible Noise         | max when working ≤65dB                |            |  |
| Relative Humidity     | 5%~95%, no condensation               |            |  |
| Design Life           |                                       |            |  |