SOLTERRA
EV CHARGERS

# A SERIES CHARGER

## MODEL:STTL3000A4855L





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 48V maximum-power charger delivers 2950W with 55A CP mode output, charging both lithium-ion and lead-acid battery packs at industry-leading speed. It offers advanced CP mode functionality enabling rapid vehicle turnaround that transforms fleet productivity and profitability.

The design incorporates active PFC and digital LLC control with forced-air cooling for sustained full-power operation. Reliable hardware with integrated prognostics and health monitoring is fully potted in silicone inside a sealed aluminium die-cast enclosure that resists vibration, shock, dust, chemicals and harsh commercial environments. It supports optional CAN bus integration for fleet management and uses adaptive charging algorithms, configurable for lithium-ion or lead-acid charge profiles, to maximise both charging speed and battery longevity.

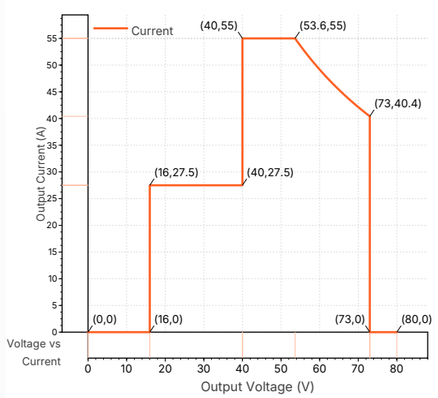
## FEATURES

| |
|---|
| Optional CANbus 2.0B / RS485. FW Update via CANbus |
| Auxiliary power 12V/2.5A/5A (optional) |
| Built-in indicator light (3 Colors) |
| Dry Switch Interlock Option 1A |
| Deep Discharge Recovery (without reverse polarity protection) |
| Optional External LED connection, Parallel upto 3 units |

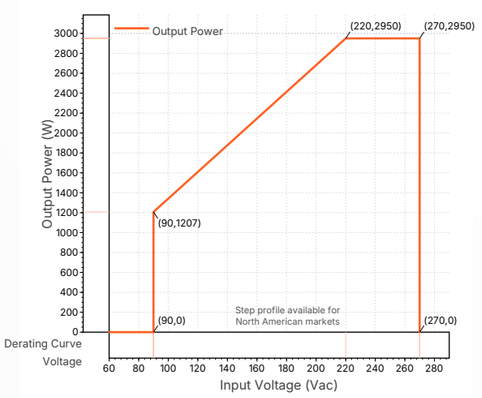
## SAFETY

| | |
|---|---|
| Isolation Levels (Input - Output) | <10mA 2000Vac 60s |
| Isolation Levels (Input - Shell) | <10mA 2000Vac 60s |
| Isolation Levels (Output - Shell) | <10mA 1000Vac 60s |
| Insulation resistance | >10MΩ (500VDC) |
| Drop Resistance | 1m height |

## OUTPUT VOLTAGE VS CURRENT




## UIN VS POWER




## MAIN ATTRIBUTES

| | |
|---|---|
| Max Output Power | 2950W |
| Peak Efficiency | 92%@220VAC |
| Voltage Range | 16V to 40V 27.5A ; 40V ~ 73V CP |
| CP Mode Output Current | 55A (peak) |
| MTBF | >150K Hours |
| Voltage Regulation | ≤±0.2 Vdc |
| Current Regulation | ≤±1% F.S. |
| Topology | Active PFC + Digital LLC ~ settable Voltage and Current limits. |
| Battery Type | Lead-acid and Lithium-ion (48V nominal) |

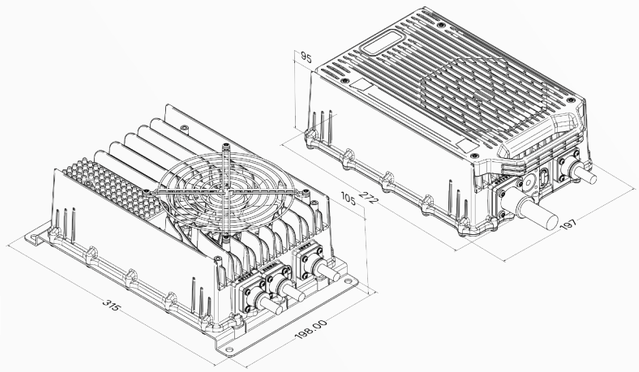
## AC INPUT ATTRIBUTES

| | |
|---|---|
| AC Input Voltage Range | 85VAC ~ 270VAC; 50/60Hz |
| Full Power Voltage Range | 220 ~ 270VAC |
| Input Frequency | 50/60Hz |
| Input Current | ≤15A |
| Input Inrush | <15A |
| Power Factor | 0.99@220VAC, full load |
| THDi | <5% |
| Input Surge Rating | 6kV CM, DM |
| Idle Consumption | <5W |

## PROTECTIONS

| | |
|---|---|
| Input Under/Over Voltage | When the AC input voltage is lower than 85Vac, the charger stops working and an under-voltage alarm occurs; when the AC input voltage is higher than 270Vac, the charger stops working and an over-voltage alarm occurs. |
| Input Overcurrent | The charger reduces the output power to ensure that the input over current (active monitoring) thresholds are not breached. |
| Output Over Voltage | If output voltage exceeds the internal OV threshold, the charger immediately cuts the output relay and gives an alarm. |
| Output Overcurrent | If load current exceeds the internal OC limit, the charger immediately cuts the output relay and gives an alarm. |
| Output Short Circuit | If the output is short-circuited, the charger shuts down output with current limit and an alarm is issued. |
| Output Reverse Polarity & No Load Protection | If the battery is connected in reverse, the charger shuts down output and alarms (reverse polarity protection not active during Activation mode). If battery voltage is missing or <⅓ of rated pack voltage, the charger alarms and gives no output. |
| Automatic Shutdown | If charging time or charging end voltage exceeds the internal maximum limit, it stops charging and alarms. |
| Over Temperature Protection | If internal or ambient temperature goes above the set value, it first reduces current (derating), then stops and alarms; charging resumes automatically when temperature falls to the recovery point. With an external probe, it can also monitor battery/ambient temperature. |

## DIMENSIONS




## MECHANICAL

| | |
|---|---|
| Dimensions (mm) | 294*196.5*95 mm |
| IP Rating | IP65 (charger housing) |
| Weight | 4.7 kg (10.4 lb) |
| Cooling Method | Forced air cooling |
| Number of Ports | 3 Input/ Output |
| Mounting Options | Portable, Onboard Version Available |
| Enclosure Type | Die Cast Aluminium |
| Connectors | Customizable input and output connectors, harness |
| Encapsulant | Silicone Potting Compound |

## ENVIRONMENTAL

| | |
|---|---|
| Operating Temperature | -25°C~65°C |
| Storage Temperature | -40°C~95°C |
| Altitude | 2000m |
| Vibration & Shock | IEC 60068-2 |
| Audible Noise | <45dB at 1m |
| Relative Humidity | 0~95%, Non-Condensing |
| Design Life | 10 Years |

## REGULATORY

| |
|---|
| IEC 61000-3-2/-3-3, IEC 61000-4-2/-4-3/-4-4/-4-5/-4-6/-4-8/-4-11, IEC 61000-6-2/-6-3 |
| IEC 61851-21-2 (CISPR 11), ISO 10605, ISO 11452-2/-4, IEC 60335-1/-2-29 |

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