SOLTERRA
EV CHARGERS

A SERIES CHARGER

MODEL:STTL3000A4850L



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 50A 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.

MAIN ATTRIBUTES

Max Output Power	2950W
Peak Efficiency	92%@220VAC
Voltage Range	16V to 40V 25A ; 40V ~ 73V CP
CP Mode Output Current	50A (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.

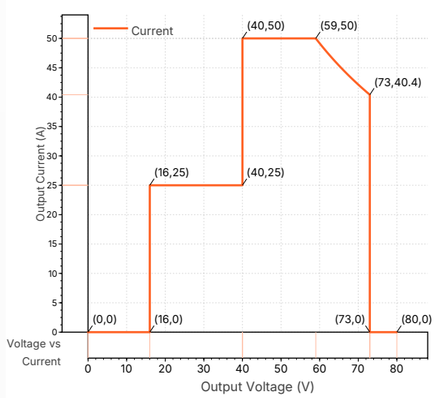
FEATURES

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

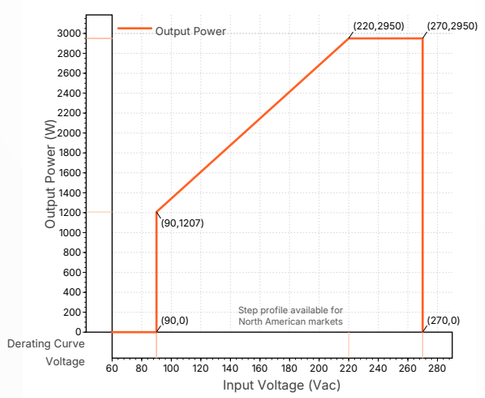
SAFETY

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

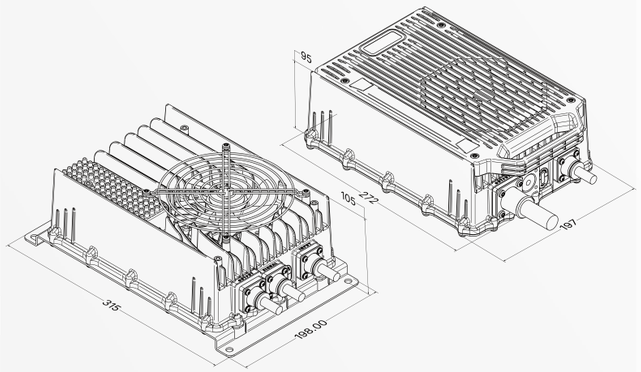
OUTPUT VOLTAGE VS CURRENT



UIN VS POWER



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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