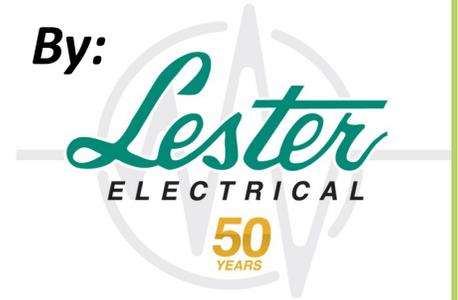


# 48V/1050W Switch Mode Battery Charger



# SUMMIT™ SERIES

By:



## ***Best-In-Class Efficiency ▪ Leading Charge Algorithms ▪ High Reliability***

### **On-Board or Off-Board Charging**

The Lester Electrical Summit Series 48V/1050W switch mode battery charger (SMBC) is designed for both on-board (built-in) and off-board (shelf) use. It features intelligent natural convection cooling (no fan) and high energy efficiency, which enables it to be used in thermally demanding applications.

### **High Efficiency: > 91.5% Peak, > 89.5% Average**

The Summit Series 48V/1050W SMBC features best-in-class AC-to-DC conversion efficiency of > 91.5% peak and > 89.5% average across a full charge cycle, including all losses from AC plug to DC connector. The charger, when paired with batteries, exceeds the applicable requirements of the California Energy Commission (CEC) Appliance Efficiency Regulations for Battery Charger Systems. It also features a high AC power factor near unity.

### **Sealed and High Reliability: IP66, > 150,000 Hours MTBF**

The heavy-duty aluminum enclosure is sealed with an IP66, NEMA 4 rating to protect the charger from ingress of water, dust, and other environmental elements. The rugged/durable charger has been designed and tested for the shock and vibration conditions that occur with on-board use. It has also been designed to provide the high reliability that is expected of a Lester Electrical product with an MTBF reliability rating of > 150,000 hours. Additionally, the charger includes a hardware watchdog timer for high uptime operation.

### **Leading Charge Algorithms: Featuring Progressive DV/DT™**

An advanced microprocessor controller is featured in the charger. Precise Lester Electrical charging and termination algorithms, included patent-pending Progressive DV/DT, prevent both undercharging and overcharging, optimizing both daily battery capacity and overall battery life.

### **Flexible Battery Types: Wet, AGM, Gel, Lithium-Ion**

This Summit Series charger includes industry-leading and field-proven wet/flooded, AGM, and gel deep-cycle lead-acid battery charge profiles. It can also be configured with battery specific, application specific, or custom charge profiles, including lithium-ion chemistries. Using the externally accessible communication port, a LE programming module or laptop/PC can be used to update the charge profiles in the field, change the active profile, and download charge cycle history records.

### **Universal AC Input**

The charger includes universal AC input and operates at 90-264 Vac and 45-65 Hz for use anywhere in the world. The IEC AC inlet enables the charger to be paired with an AC cord with the appropriate localized plug.

### **Lockout, Remote LEDs, & Battery Temperature Sensing**

The optional lockout/interlock control output can be used to prevent vehicle/equipment operation when the charger has AC power available (on-board) or when the DC plug is connected to the vehicle with a supported DC connector configuration (off-board). The charger also features optional remote LEDs to provide installation flexibility. The optional battery temperature sensor enables temperature compensation for applications that require it.

### **Safety and Regulatory Approvals**

The charger is UL recognized/listed, cUL/CSA certified, and will be CE certified (pending). It includes FCC and applicable EN approvals. The charger will also be certified compliant with the CEC Appliance Efficiency Regulations for Battery Charger Systems (pending) using the in-house Lester Electrical CEC efficiency regulations test system.

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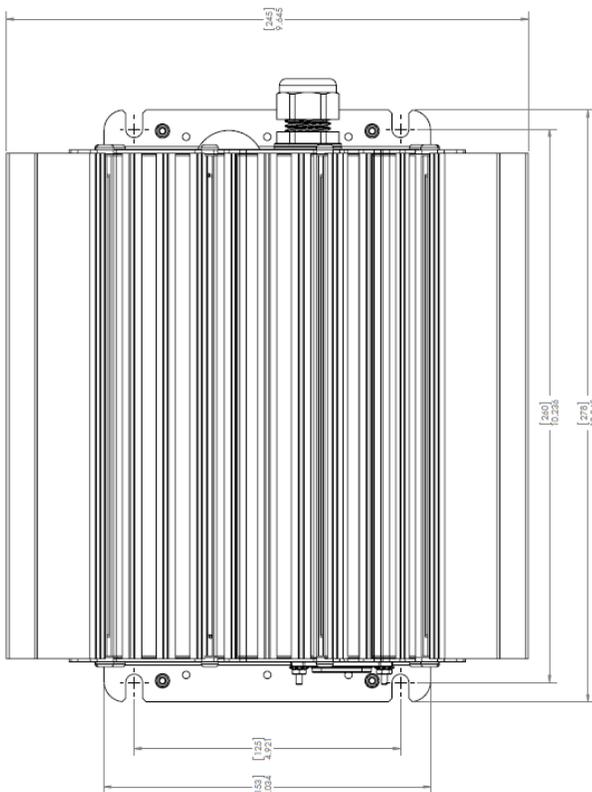
## SPECIFICATIONS

### AC Input

|                          |   |
|--------------------------|---|
| Voltage range, rated     | 100-230 Vac   |
| Voltage range, operating | 90-264 Vac<br>( < 100 Vac: reduced power)   |
| Frequency, rated         | 50-60 Hz  |
| Frequency, operating     | 45-65 Hz  |
| Phase                    | Single-phase  |
| Current, maximum         | 12 A  |
| Efficiency               | > 91.5% peak;<br>> 89.5% average, full cycle;<br>CEC test procedure,<br>AC and DC losses included |
| Power factor             | > 0.98, 120 Vac;<br>> 0.95, all AC input voltages   |
| Protection               | Current limit, surge, transient,<br>under voltage   |

### DC Output

|                       |   |
|-----------------------|---|
| Voltage, nominal      | 48 Vdc  |
| Voltage, maximum      | 72 Vdc  |
| Voltage, min start-up | 10 Vdc  |
| Power                 | 1050 W  |
| Current, rated        | 19.5 A  |
| Current, maximum      | 21 A  |
| Battery types         | Wet/flooded, AGM, gel<br>deep-cycle lead-acid;<br>lithium-ion; custom                                 |
| Protection            | Current limit, short circuit,<br>reverse polarity, under voltage,<br>over voltage, wrong batt voltage |



### LEDs

(Remote LEDs Optional)

Charge Complete (green),  
Charge Status (yellow),  
Fault (red)

### Lockout Control

Option 1

Optional

Pulls down to battery neg (-)  
when active, pulls up to battery  
pos (+) when not active

Option 2

Pulls down to battery neg (-)  
when active, floating when  
not active

### Battery Temp Sensor

Optional

### Mechanical

Dimensions (LxWxH)

10.945 x 9.645 x 4.305 in  
(278 x 245 x 109 mm)

Cooling

Natural convection (no fan)

AC connector

IEC 60320 C16 inlet

with optional cord clamp

DC cable/connector

Variety available

Lockout cable/connector

Variety available

Mounting

Shelf, wall, bulkhead,  
threaded steel rod, hook

Handle

Optional

### Environmental

Enclosure rating

IP66, NEMA 4

Operating temperature

-25 °C to 60 °C (-13 °F to 140 °F);

Storage temperature

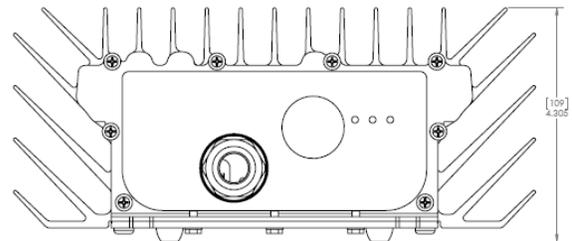
-40 °C to 85 °C (-40 °F to 185 °F)

### Reliability

> 150,000 hours MTBF at full output at 25 °C  
(Telcordia SR-332, MIL-STD-267)

### Safety/Regulatory

UL recognized/listed; cUL/CSA certified; CE certified (pending);  
EN safety, emissions, immunity; FCC Part 15, Class A; CEC  
Appliance Efficiency Regulations, Title 20 (pending)



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