

**AC Input:**

Input Voltage Range: 90 ~ 265 VAC  
Frequency Range: 47 ~ 63 HZ  
Power Factor Correction: 0.96 ~ 0.98

**DC Output:**

Output Power: 135 W Max.  
Output Voltage: 10.0 ~ 14.7 VDC  
Output Current: 10 Amp Max.

**Signal Inputs/Outputs:**

Customer Fuel Board Interface  
Built in 2-Port USB Hub

**Processor:**

Charger will utilize an 8-bit processor with 4 Kbytes of flash memory. The processor is serially programmable through an on-board connector, and firmware updates are possible over the USB interface. The built in A/D Inputs monitor and control battery charging voltage and current, and compensate for load current during charge.

**Charging Operation:**

Upon application of AC power, the Charger Control Board will utilize the main board to perform a three-stage charging algorithm:

**Initialization:**

Trickle Charge mode in order to determine battery connection and state of charge.

**Stage 1:**

Constant current stage with a 14.40 V +/- 0.5% limit. The current level depends on battery type with a maximum of 10 A.

Single 18AH battery = 5A +/- 5%

Two 18AH batteries in parallel = 10A +/- 5%

Current may also be affected by load, i.e.:

*Single 18AH battery will charge at 5A nominal; the maximum charger current is 10A; so up to a 5A load can be supported without affecting the charge current in this case. Load current beyond 5A will reduce the available charge current and increase stage 1 time.*

Stage 1 is complete when the battery voltage reaches 14.40 V. If the battery does not reach 14.40 V within 12 hours, the charger will switch to a Trickle Charge mode until power is removed or cycled.

**Stage 2:**

Constant Voltage stage with a “taper” current profile. The voltage will stay within the range of 14.40V to 14.70V +/- 5% during this stage. The current will fall from stage 1 current level to approximately 0.5A according to battery charge level.

Stage 2 is complete when the charge current falls to 0.5A. If the charge current does not fall to 0.5A within 12 hours, the charger will switch to a trickle charge mode until power is removed or cycled.

**Stage 3:**

Trickle Charge with a constant voltage of 13.50V to 13.80V. the charger will remain in Trickle Charge mode until power is removed or cycled.

**Fuel Board Support:**

The charger has a driver that will support standard indicator/switch functions of a customer provided fuel board. It will also allow for communication with an optional Shurite Systems DC Power Monitor.

AC on  
Shutdown  
Battery Connect  
Charging  
Charged  
Alarm Silence/Reset Pushbutton  
Battery Capacity – 5 states  
Error Indication

**Fan Operation:**

The fan output is enabled under the following conditions:

1. AC disconnected and load current is 2A or greater.
2. AC connected.

**Standards:**

The primary power supply is UL60601 approved for medical applications.

Individual applications in customer’s power system enclosure must be submitted for approval.