

750 Watt Lead-Acid EV Charger Data Sheet

Description:

Green Watt's 750W Lead-Acid battery charger for 24V batteries with maximum 30V multifunction is designed with built-in intelligent control and circuit designs, providing performances of high-power density, high reliability, and high efficiency. The module is designed with perfect thermal management, anti-shock technique, self-protection features and high reliability for long lifetime. This charger offers solid and safe power conversions for multiple battery charger applications.

Features:

- Universal AC Input/Full Range
- 90-264 VAC Input
- High Reliability
- Self-protecting features
- Cooled via cold plate mounting
- Efficiency up to 94%
- Over Voltage Protection
- Short Circuit Protection
- Over Temperature Protection
- Reverse Polarity Protection
- Waterproof IP65 Enclosure
- Compact Mechanical Design



Model Number	Input Voltage	Input Current (max)	Output Voltage Range
EVC-24-750 (PLD750-14CH11-X13)	90-264Vac	10A at 110VAC 5A at 240VAC	22-30V

Electrical Specifications:

Input Parameters	Min	Typ	Max	Units
Input Voltage Range* *Designed to optimum performance at 110V and 220V nominal AC lines	90	110	264	VAC
Input Frequency	47	60	63	Hz
Power Factor 110 VAC 220 VAC	0.99 0.96			
Input Current 110 VAC 240 VAC			10 5	A
Efficiency 110 VAC 240VAC	90 92.5	92 94		%

Output Parameters	Min	Typ	Max	Units
Output Current (Tolerance of +- 3%)	5	22	25	A
Output Voltage (Tolerance of $\pm 1\%$ at room temp., $\pm 1.5\%$ at temp. extremes)	22	27	30	VDC
Output Power	110	594	750	W
Noise & Ripple – lout 25°C – 20MHz bandwidth			± 10	% lout
Turn-on Delay Time –Full Load			3.0	s
Output Overshoot/Undershoot			10	%

Dynamic Output Characteristics

Note 1:

Charger will charge **FOUR Storage Battery System (SBS) Model S-6V195, 6V lead-acid batteries** to the charge curve on the battery manufacturer's datasheet, OR

Note 2:

Charger will charge **THREE Storage Battery System (SBS) Model S-8V195, 8V lead-acid batteries** to the charge curve on the battery manufacturer's datasheet, OR

Appendix A:

See optimized charge curves and plots as defined and selected by the design team for this charger.

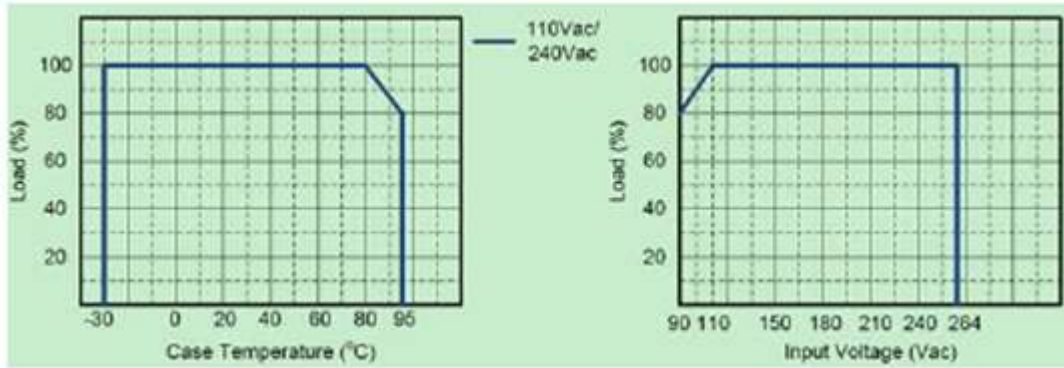
General Specifications			
Isolation	Charger has a minimum of 800VDC floating output isolation from mains power, and thus be capable of combining outputs from multiple chargers that may be powered by different circuits with different input power sources.		
Over Voltage Protection	The PSU enters latch mode for a maximum of 2 attempts to charge for the duration of 20 minutes each, when the output voltage is too high between 36V and 40V. Charger will go into off state after that, until AC power is recycled, and the excess output voltage condition is fixed.		
Over Temperature Protection	The power supply shall go into thermal protection as the maximum case temperature exceeds 95±3°C. The unit shall enter hiccup mode and shall self-recover when the temperature returns into normal operating range.		
Short Circuit Protection	When output is shorted, power supply will enter hiccup mode, and shall self-recover when the fault condition is removed.		
Battery Under Voltage Protection	When the voltage of the battery attached is lower than 20V ± 1V, the charger shall not output.		
MTBF: @ 25°C, Full Load, Nominal Input	≥ 200,000 Hours		
Product Life @ 50 °C Full Load, Nominal Input	≥ 50,000 Hours		
Temperature - Operating	MIN MAX	-30 +80	°C
Temperature - Storage	MIN MAX	-40 +85	°C
Relative Humidity	10% - 100%		
Ingress protection, Weatherproofing (IP Rating of the AC input and Output and LED signal connector will depend upon what is selected)	IP65		

Electromagnetic Compatibility EMI/EMC	
EMI, RFI	Comply with EN55002 Class A, shall have a minimum of 6dB margin.
Immunity:	
EN61000-3-2	Harmonic Current Emission
EN61000-3-3	Voltage Fluctuations and Flicker
EN61000-4-2	ESD 16kV Contact Discharge
EN61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-Rs
EN61000-4-4	Electrical Fast Transient/Burst – EFD
EN61000-4-5	Surge Immunity Test, AC power line: line to line 2kV, line to each 4kV
EN61000-4-6	Conducted Radio Frequency Disturbance Test-Cs
EN61000-4-8	Power Frequency Magnetic Field Test
EN61000-4-1-1	Voltage Dips

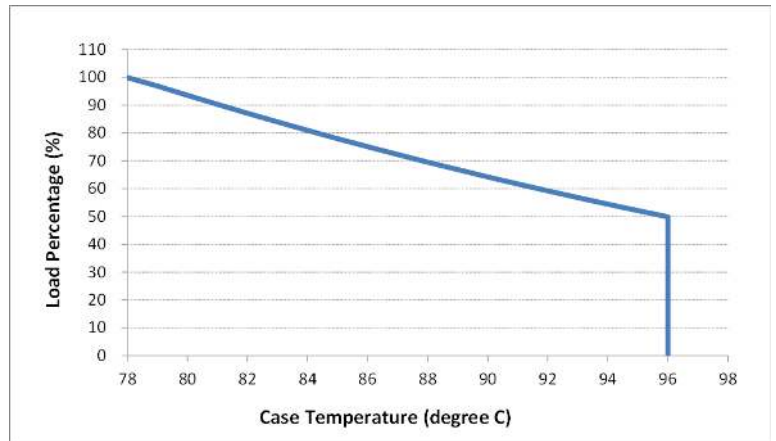
Note: Specification is subject to change without notice.

Charger level requirements: Designed and approved to UL1564

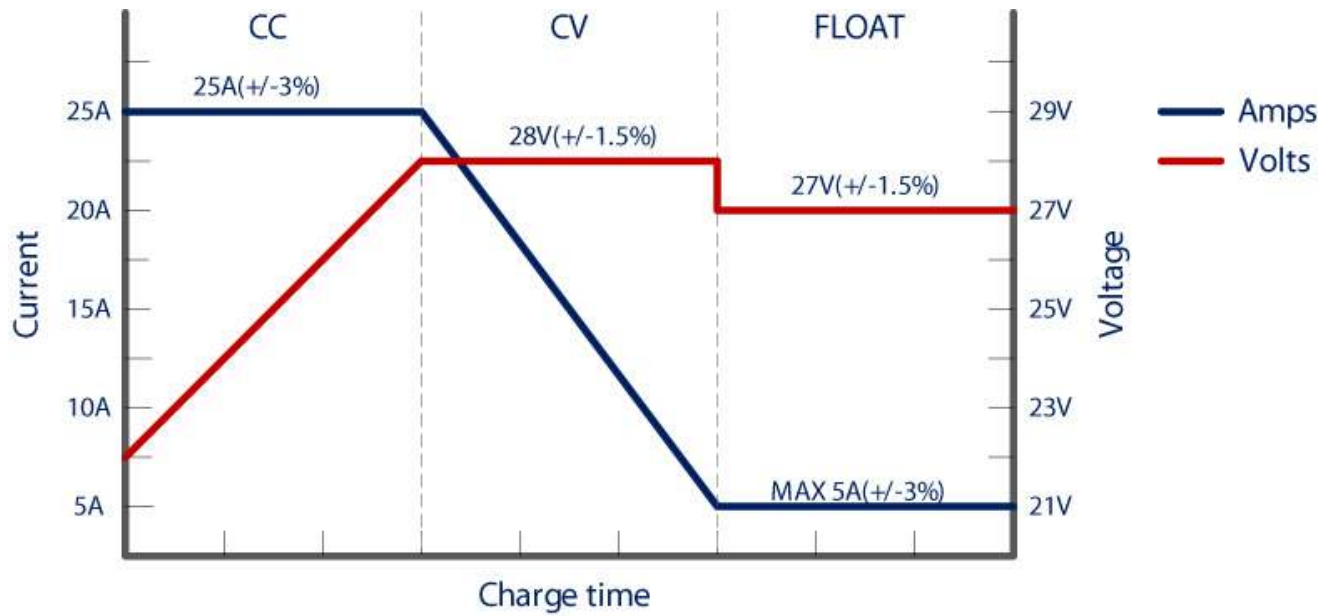
DERATING CURVES



The charger will self-regulate the output power to prevent overheating that may result in possible internal damage.

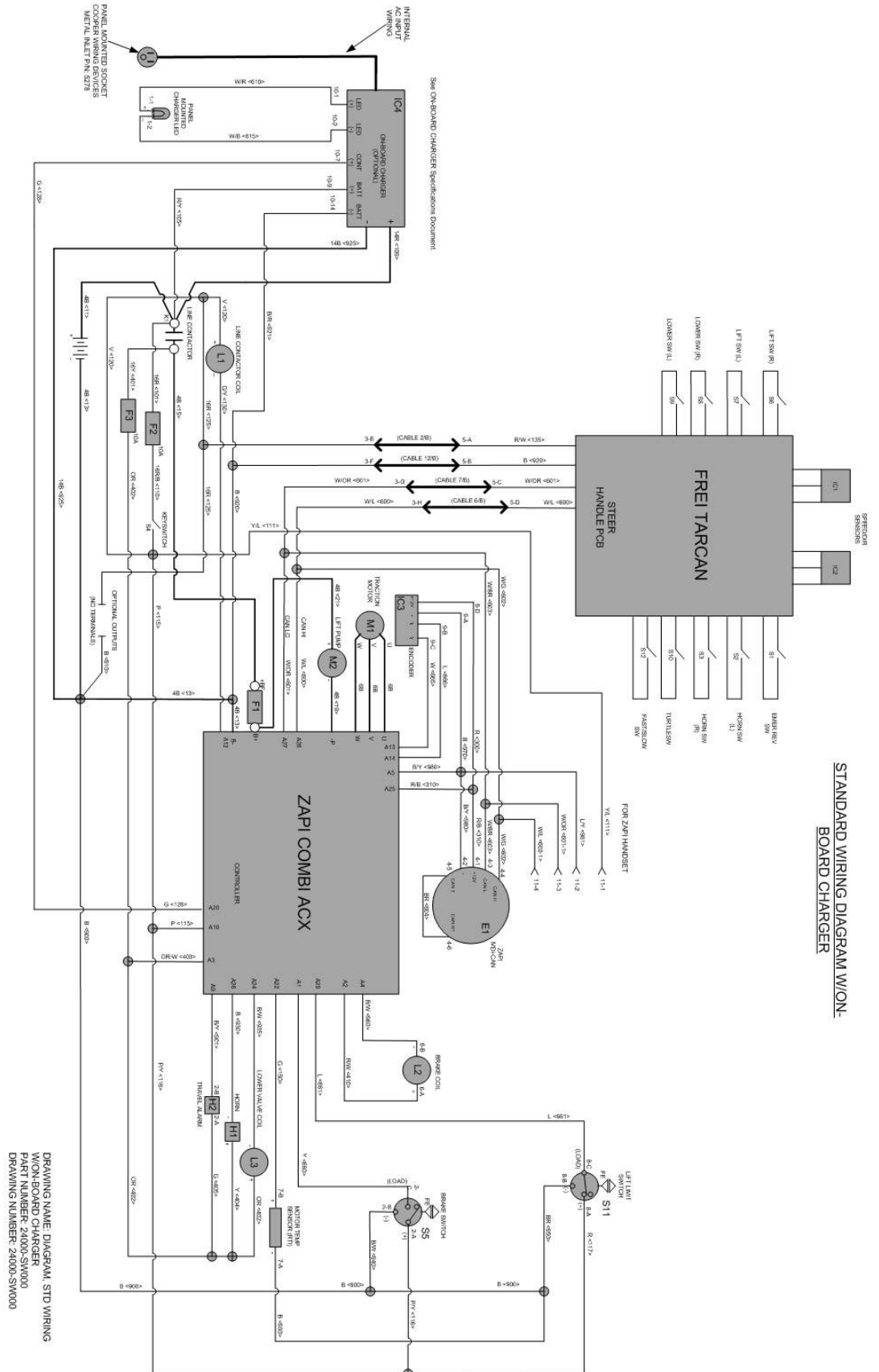


Appendix A:

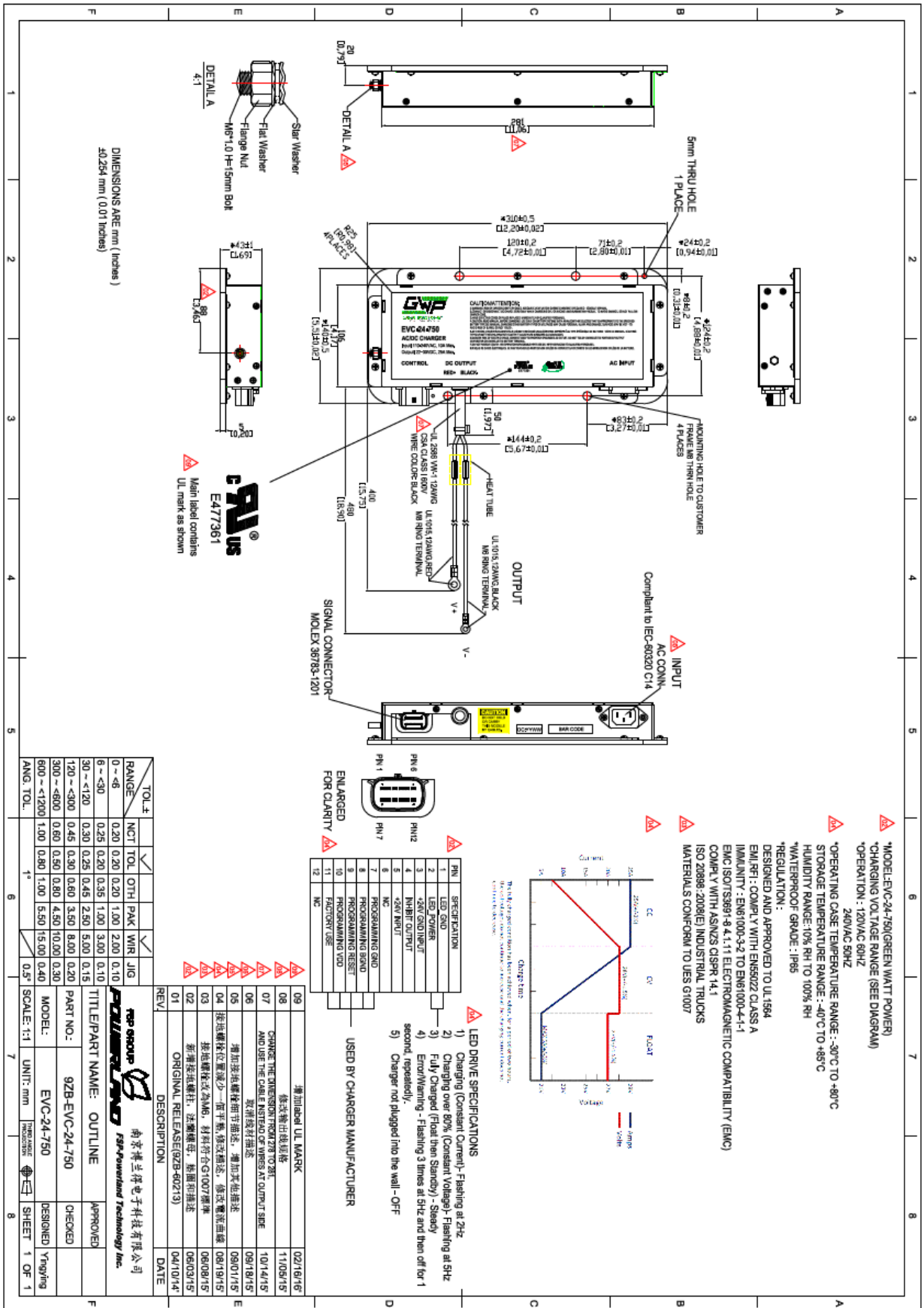


The fully charged condition has been achieved when, for a period of two hours, the cell voltages do not continue to increase and the charging current does not continue to decrease.

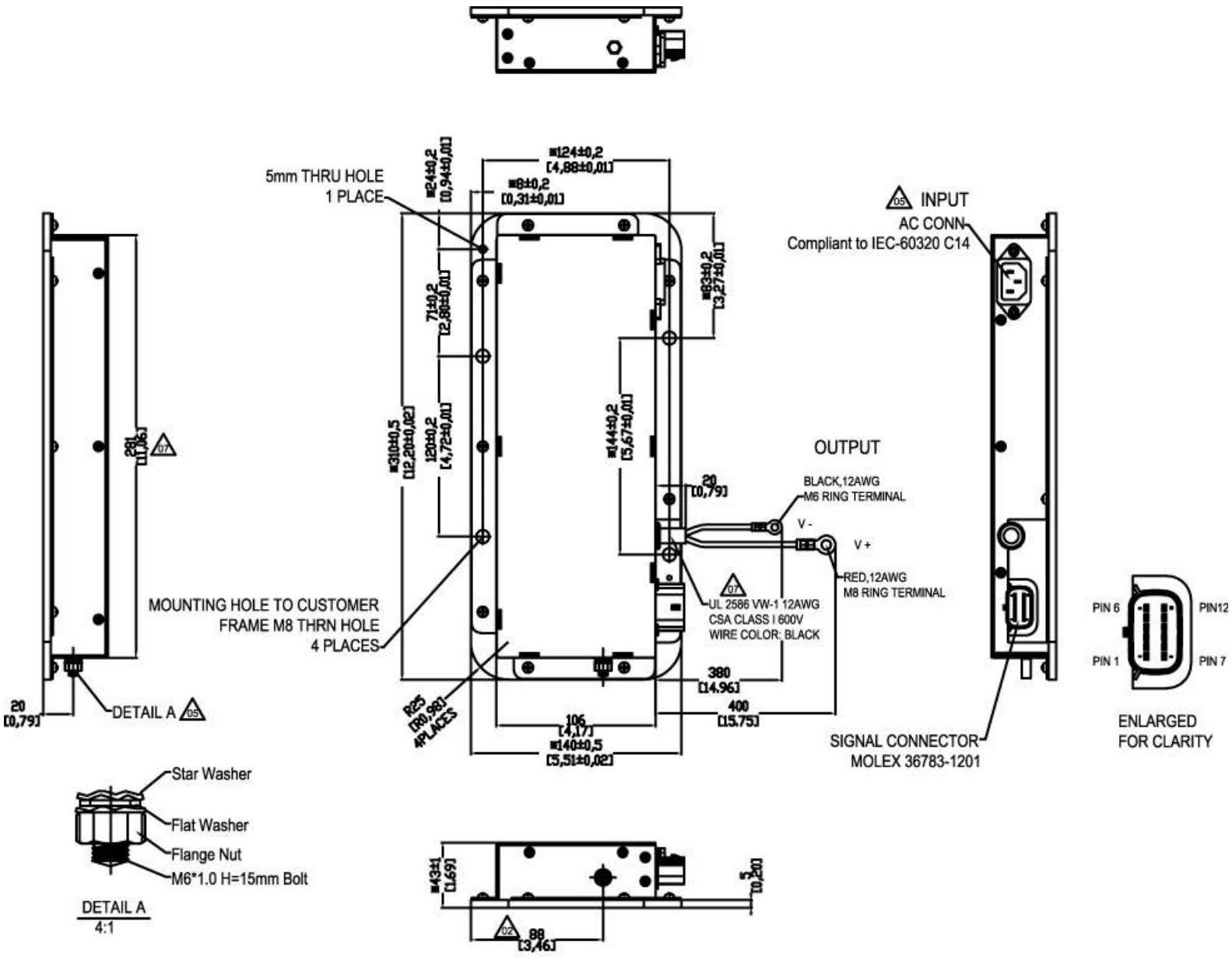
System Schematic



STANDARD WIRING DIAGRAM W/ON-BOARD CHARGER



Mechanical Dimensions:



DIMENSIONS ARE mm (inches)
±0.254 mm (0.01 inches)