



# Enclosed Vehicle Power System (EVPS)

**P/N: 100277-501**



**28V DC 4.0 kW**

The EVPS is a 4000W, 28V DC power generator designed and manufactured by The Dewey Electronics Corporation. This Auxiliary Power Unit (APU) is designed to operate in parallel with the 24V vehicle power system or as an independent DC voltage source. The enclosure is configured to allow vehicle mounting from three directions (top, bottom, rear) without changes to the enclosure.

**Designed with Customer Needs First:** User concerns were addressed in the overall functionality of the EVPS. Specifically, the EVPS was designed to provide flexibility in installation, the ability to charge deep discharged and “dead” batteries, support vehicle silent watch requirements, provide customized power management features, allow customized interconnections to the vehicle fuel supply, and provide customization of local and remote controls for each application. Also the EVPS has a low noise signature of 70 dBA or less at 7 meters and meets the sand and dust requirements of MIL-STD-810F, Test Method 510.4.

**High Reliability & Simple Design (no liquid cooling loop):** The EVPS is powered by a one-cylinder, four-cycle, fuel injected, naturally aspirated, air-cooled, EPA compliant diesel engine which occupies the front half of the generator set. The engine is capable of operating on DF-1, DF-2, or JP-8 fuel. A safety device automatically stops the diesel engine during conditions of low engine oil pressure.

**Proven Power Generation Methods (no high frequency power electronics):** The DC alternator is a two-pole, revolving field-type AC alternator rectified to DC. The alternator is coupled directly to the diesel engine crankshaft. The battery charging generator provides the proper voltage and current to efficiently charge a pair of Hawker Armasafe Plus AGM 12 volt batteries in a 24V DC configuration in under one hour.

**Easy to Maintain:** The EVPS enclosure was designed to allow all scheduled maintenance to be accomplished without the need to remove the engine from the enclosure. Access to all filters and replaceable components are available through the doors that are located on the front and end of the enclosure. The electronic controller is also located outside the engine and alternator compartment in a lower ambient temperature environment to achieve the MTBF goal of greater than 1000 hour for this APU.

**Local & Remote Controls:** The EVPS can be operated via the Local Control Panel or by utilizing the customer specified Remote Control Box. This remote is hardwired and can be located up to 25 feet away. It has the ability to display the unit's output voltage and engine hours, and gives the operator full control of the start/stop functions.



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## PRELIMINARY SPECIFICATION

<b>ELECTRICAL RATINGS</b>	
Output Voltage	28V DC
Continuous Output Power	4500 Watts @ sea level/70° F
<b>SIZE AND WEIGHT</b>	
Length	36"
Width	24"
Height	24"
Weight	310 lbs, dry
<b>OPERATING ENVIRONMENT</b>	
Temperature Range Nominal	-40°F to 130°F (-40°C to 55°C)
Temperature Range Extreme Cold	-46°F (starting -40°F)
Temperature Power Derating	3%/18°F above 95°F
Altitude	Sea level to 8000 ft
Altitude Power Derating	3.5%/1000 ft above sea level
Inclination	15° Max.
<b>POWER QUALITY</b>	
Regulation	4%
Application of Rated Load - Transient	15% dip with batteries connected
Application of Rated Load - Recovery	1 second
Rejection of Rated Load – Transient	15% rise with batteries connected
Rejection of Rated Load	0.5 seconds
DC Ripple	Less than 7%
<b>ENGINE</b>	
Manufacturer	Yanmar
Model	L100V
Engine Type	Air cooled, 4 cycle, vertical cylinder
Number of Cylinders	1
Starting System	24 V DC Electrical/manual recoil pull starter
Decompression System	Manual type with auto-return lever
Type of Fuel	DL-1, DL-2, or JP-8
Fuel Consumption Rate	0.58 gal/hr @ 100% load
Max. Distance for Fuel Lines (Fuel source to fuel pump)	72 inches
<b>ALTERNATOR</b>	
Manufacturer	C.E. Niehoff (Dewey Specified)
Type	Brushless with integrated rectifier
<b>ELECTRICAL CHARACTERISTICS</b>	
Voltage Connections	28V DC, 2 Wire
Voltage Set Point	28.0 V DC
<b>PROTECTIVE DEVICES</b>	
Low Oil Pressure Switch	Less than 15 psi/engine shutdown
Fuel Solenoid Switch	Fault engine shutdown
<b>INSTRUMENTATION &amp; INDICATORS</b>	
Hour Meter	Electro-mechanical
Remote Indicator	Blue LED
Local Indicator	Yellow LED
Fault Indicators	Six (6) Green and Red LEDs

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