



OVERALL DIMENSIONS AND WEIGHT:

Height: 67 Inches

Length: 106 Inches

Width: 66 Inches

Weight (Dry): 4,800 Lbs.

The Essex Electro Engineers, Inc., Model No. B809E Ground Power Unit, is intended for use in supplying 90 KVA, 0.8 power factor, 115/200 volt, 3 phase, 400 hertz, 28.5 and 270 volts D.C. electrical power for starting and servicing aircraft.

The Ground Power Unit basically consists of a diesel engine driving a 400 cycle, brushless generator. The generator will supply 400 cycle power for servicing aircraft. All the necessary electrical controls and instruments are furnished on a control panel. The diesel engine and generator, along with all the necessary components are enclosed within a sheet metal enclosure for operation in inclement environments. The entire unit is mounted on a four-wheel, steerable trailer.

The engine is a heavy duty, electronically controlled, diesel engine. Each engine is equipped with an oil cooler, full flow oil filter, fuel oil strainer and fuel oil filter, an air cleaner, a fan, radiator and a starting motor. The engine comes equipped with a cold weather starting aide for temperatures as low as -25° F (unaided) and -40°F (aided - 120 VAC heater). The engine is can operate on a variety of diesel and aircraft fuels from DF-1 to JP-8. The engine enclosure has all necessary panels and doors to provide for proper ease of maintenance and/or repair.

The generator is a synchronous alternating current generator of the brushless revolving-field type of single bearing construction. Generator excitation current is supplied from a direct connected, brushless rotating D.C. exciter. Eyebolts installed in

the generator frame enable the complete generator to be lifted with a conventional overhead hoist for repairs and/or overhaul. A heavy steel wrapper cover of drip-proof construction encloses the frame assembly. The generator comes with a reconnection panel to reconnect the output of the generator for high voltage operation.

The Voltage Regulator is an automatic, solid-state type Voltage Regulator. The Voltage Regulator output is controlled by a switching transistor which is phase angle fired. An integrated circuit voltage sensing circuit controls the relative on-off cycle of the switching transistor to control total rotating exciter field current.

Various safety controls are provided to protect the Power Unit from adverse conditions. A fault system is provided which contains a solid state Generator Fault Detector and an Engine Speed and Fault Detector.

All operating controls and instrumentation necessary for proper operation of the Ground Power Unit are located on the control panel.

Illumination lighting is furnished on the control panel for night operation. Reflectors are furnished on the trailer.

The trailer is a four-wheel, steerable type with a tow bar. The trailer has a spring leaf suspension system with pneumatic type tires.



TECHNICAL DESCRIPTION:

GENERATOR DESCRIPTION 72 KW, 400 Hz continuous load at 0.8 power factor, at rated voltage

ENGINE:

Prime Mover..... Cummins QSB 6.7-C160, Tier III

Horsepower..... 165 HP @ 2000 RPM

AC OUTPUT VOLTAGE..... Three phase, four wire, 115 volts line-to-neutral and 200 volts line-to-line (115/200 volts).
 Reconnectable 230/400 Volts. Meets MIL-STD-704E.

AC OUTPUT CABLE..... A 60 foot AC output cable with an MS25486 plug is included with the unit.

28.5 VDC OUTPUT TRANSFORMER RECTIFIER CONTROL POWER:

Nominal Voltage..... 28.5 Volts DC

Steady State Voltage 28.5 Volts DC ± 1%

Ripple Amplitude..... 1.5 Volts Maximum

Amperage 600 Amps, 2,250 Amps peak

270 VDC OUTPUT RECTIFIER:

Nominal Voltage..... 270 Volts DC

Steady State Voltage 270 Volts DC ± 1%

Ripple Amplitude..... 3 Volts Maximum

Distortion Factor 0.015 Maximum

Amperage 267 Amps Continuous

ENVIRONMENTAL OPERATING EXTREMES:

Temperature -40°F to 125°F

Altitude..... Sea Level to 8,000 Ft.



Approved by the U.S. Air Force for the Following Platforms:

- A-10
- OA-10
- AC-130H/U
- B-1B
- B-2
- B-52
- C-5
- C-17
- CV-22
- C-130E/H/J/J-30
- F-117A
- F-15A/B/C/D/E
- F-16A/B/C/D
- F-22 (Lockheed approved)
- F-35 (Lockheed approved)
- HC-130P/N
- KC-10
- KC-135
- LC-130H
- MC-130E/H/P/W
- MH-53J/M
- UH-1N
- WC-130J
- Other general purpose and trainer aircraft