



**TECHNICAL DATA SHEET
AIRCRAFT GROUND POWER UNIT
MODEL NO. B951
NAVY DESIGNATION: A/M 32A-108**

2015 Mitchell Blvd Schaumburg, IL 60193 Phone: 847-891-4444 Fax: 847-891-9111 Web: essexelectro.com

COGNIZANT SERVICE: U.S.N. NATIONAL STOCK NUMBER: 6RX6115-01-437-1209



OVERALL DIMENSIONS AND WEIGHT:

Height: 48 Inches Length: 120 Inches Width: 64 Inches Weight (Dry): 6,750 Lbs.

FUNCTIONAL DESCRIPTION:

The Essex Model A624, NC-10C, is a mobile, diesel engine driven, electric power plant. This power plant is designed to provide AC and DC power for servicing, maintaining and starting Helicopter and Jet Aircraft. It will supply regulated AC electric power up to 90 KVA at 0.8 power factor, 120/208 volts, 3 phase, 400 hertz. A portion of the generated AC power is rectified to supply 28 volts DC at 750 amperes continuously (1000 amperes intermittently) for aircraft starting. The unit is completely self contained and suitable for outdoor service. A four wheel leaf spring running gear equipped with 6.90 x 9 tires is supplied for towing. A hinged tow bar with a 3" i.d. lunette eye is furnished for connecting to a towing vehicle. Maximum towing speed is 20 MPH. For parking, a mechanical hand brake is supplied. The AC generating system consists of the main alternator, a magnetic amplifier for voltage regulation, automatic field flashing from a separate 28 VDC control circuit. The main DC output circuit consists of full wave silicon rectifiers, transformer, and magnetic amplifier for voltage regulation. The AC

input to the DC system is protected by a circuit breaker, and the DC output voltage is protected by overvoltage circuitry and automatic current limiting features. An auxiliary 28 VDC control system is utilized both for engine and electrical controls. This system is powered by a 24 volt battery and/or an alternator battery charging system. The control system includes a fault tracer that illuminates a panel light to indicate a system malfunction.



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TECHNICAL DESCRIPTION:

ENGINE	Detroit Diesel, General Motors Corporation 6-cylinder, 2 cycle, Series 4-71, 215 HP at 1846 RPM Qualified to MIL-E-11276A.
Engine Fuel	DF-1 and DF-2 (VV-F-800); Marine (MIL-F-16884C); JP-5 (MIL-F-5624C) for emergency use only.
Fuel Tank	30 Gallons; with filler spout and drain.
Fuel Gauge	Electric, direct reading: E, 1/4, 1/2, 3/4, F.
Fuel Level Switch	Shuts down engine when fuel supply reaches a low level.
Oil Filter	Full flow; replaceable cartridge type.
Cooling System	Fin and tube type pressure radiator; fan cooled; gear driven coolant pump; 35 quart capacity; automatic shutdown switch for high water temperature.
Starter	Electric motor.
Speed Control	DDEC IV Electronic Fuel Injection System.
Overspeed Switch	Shuts down engine air when speed exceeds 2100 rpm \pm 50 rpm. Protects the generator and other rotating components.
Battery Charging Alternator	35 ampere, belt driven, rectified to 28 VDC.
A.C. GENERATOR	90 KVA AT 0.8 p.f., 120/208 volts, 3 phase, 4 wire, 400 hertz at 1846 RPM.
AC Output Power	120/208 volts, 3 phase, 4 wire, 400 hertz, 90 KVA continuous (0.80 p.f. lag). Total AC power developed is applied to two AC cables and DC power supply.
AC Voltage Regulator	120/208 volt, 3 phase, 400 hertz input power; two magnetic amplifier stages; supplies total power to AC generator field.
Phase Balance	With a three phase balanced load, no load to full load maximum voltage difference between phases is 1/2% of rated voltage.
Field Excitation	Automatic field flashing supplied by the 24 volt control circuit when starting. Excitation supplied by magnetic amplified type voltage regulator when engine is running.
Frequency Adjustment	390 to 410 Hertz (\pm 1/2% regulation)
DC Output Power	28 Volts at 750 amperes continuous; 1000 amperes intermittent (current limited) 10 seconds ON, 20 seconds OFF for 8 consecutive cycles, or 750 amperes current limited. Regulated to \pm 0.5 volts at end of cable.



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DC Rectifier Silicon type power rectifiers mounted on air-cooled fins, two full wave bridges for effective six phase configuration.

DC Voltage Regulator Two stage magnetic amplifier regulates voltage within ± 0.5 volt no load to full load with response time of 0.25 second. Input voltage to the cable is automatically boosted to maintain rated voltage, at end of cable, up to 750 ampere load.

OUTPUT CABLES Two AC cables, each 30 feet long (one compensated) conform to MS90328-14. One DC cable, 30 feet long, conforms to MS90347-20. Each on separate spring-return reel.

STORAGE BATTERY 24 volt for unit control circuit, floodlight, panel and taillights and engine starting.

OPERATING LIMITATIONS:

Temperature Range Without ether starter - 40°F to 125°F (-40°C to 52°C)
With ether starter - -18°F to 125°F (-28°C to 52°C)

Relative Humidity 100%

Altitude Range Sea level to 8000 feet.

Operating Plane 15 degrees maximum in any direction from horizontal.