

**GN02-75A-1**

## **78 kVA 6-Phase 124 Vac Oil-Cooled Generator**



The IPS Model GNO2-75A-1 conduction oil-cooled generator provides 78 kVA of 6-phase 124 Vac, 433 Hz to 580 Hz. The 6-phase output from the generator is rectified to 270 Vdc by the Converter/Generator Control Unit (C/GCU), IPS Model CV03-75D-1, providing power quality that meets MIL-SPEC-704E requirements. Below 6,500 rpm, and down to 1,300 rpm, which corresponds to the Low Pressure Turbine (LPT) windmill speed, the generator provides (through the C/GCU) 5 kW of 28 Vdc power. The generator incorporates a permanent magnet generator (PMG), eliminating the requirement for an external excitation source for generator build-up.

Designed to provide power for the Global Hawk UAV, the generator is directly mounted to the engine LPT spool inside the aft cone of the engine. Mounting a generator directly to the spool of a gas turbine engine eliminates the need for a gearbox pad, reducing size, weight, and cost.

The ambient temperature at the mounting location is in excess of 500 °F. Survivability at this high ambient temperature is achieved using several cooling techniques. The stator housing includes a sleeve in which cooling oil is continuously flowing, effectively separating the environment inside the generator from the outside, and isolating the electromagnetic components inside the generator from the ambient heat. In addition, using an innovative technique patented by IPS, the rotor is oil cooled in a way that assures that each turn of every winding is cooled along its full length. The generator contains a pump and bypass valve which maintains a constant oil pressure and flow throughout the generator's speed range.



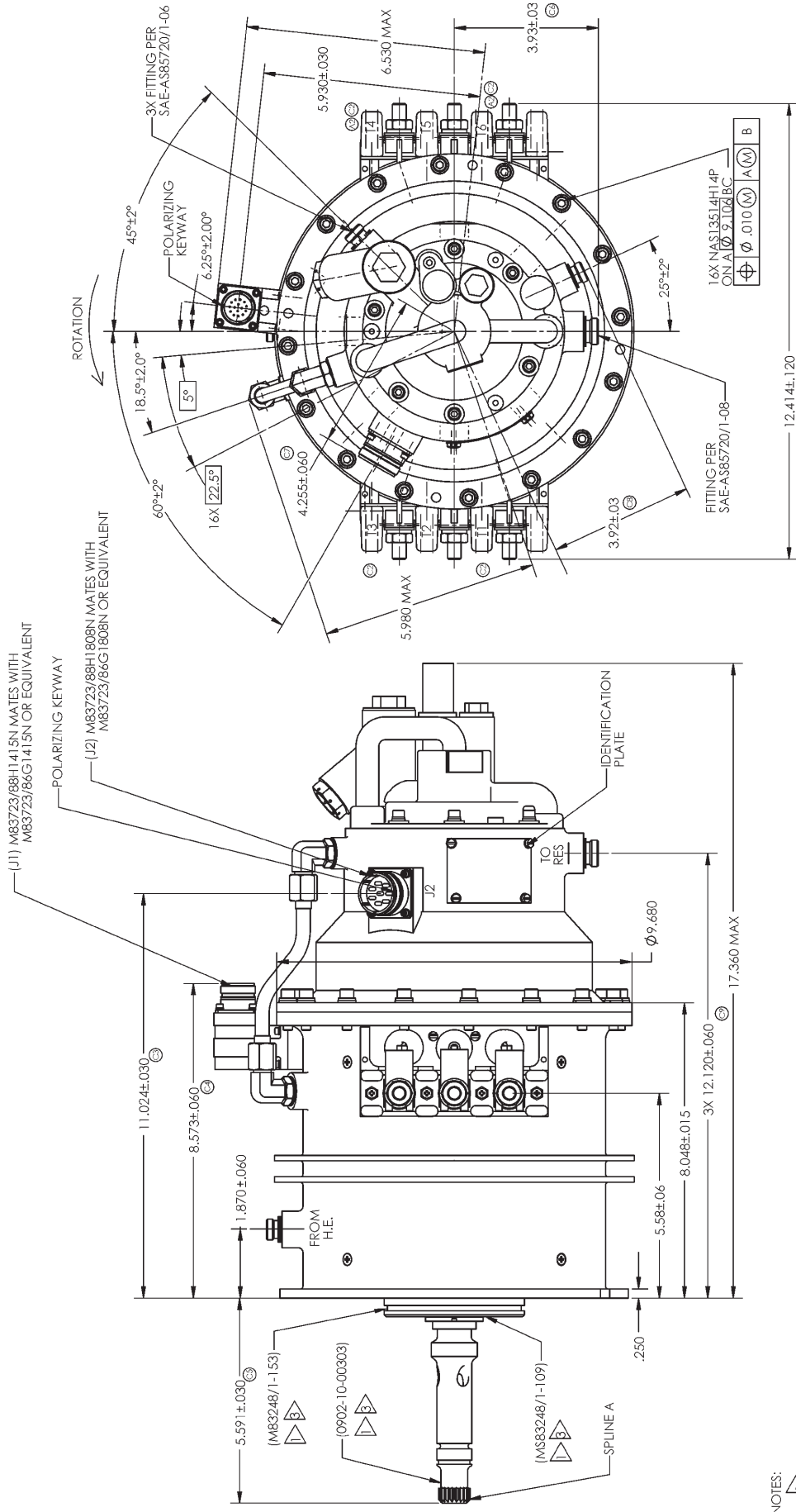
### **Specification**

<b>Output</b>	6-phase 124 Vac
<b>Rated Load</b>	78 kVA
<b>Overload</b>	82 kVA, 5 min; 120 kVA, 5 sec
<b>Speed Range</b>	6,500 - 8,700 rpm
<b>Overspeed</b>	10,000 rpm
<b>Weight</b>	88 lbs
<b>Overhung Moment</b>	500 in-lbs
<b>Efficiency</b>	93.2%
<b>Cooling Type</b>	Oil Conduction
<b>Oil Flow</b>	3.5 gpm @ 82 °C
<b>Altitude</b>	68,000 ft
<b>Power Quality</b>	MIL-STD-704E
<b>EMI</b>	MIL-STD-461E
<b>Environmental</b>	MIL-STD-810F



**The Power To Do More**

# 78 KVA 6-Phase 124 V ac Oil-Cooled Generator



NOTES:

- 1 LUBRICATE INPUT SPLINE AND O-RINGS WITH MIL-L-23699 OIL OR EQUIVALENT.
- 2 2X RECEPTACLES, 3X OIL FITTINGS AND SPLINES TO BE SUPPLIED WITH PROTECTIVE SHIPPING CAPS.
- 3 O-RINGS M83248/1-019, M83248/1-153 AND DRIVE SHAFT ASSEMBLY 0902-10-00303 TO BE SUPPLIED WITH GENERATOR IN SEPARATE PACKAGE. THESE PARTS ARE REQUIRED FOR CUSTOMER INSTALLATION.
- 4 TORQUE NUTS TO 125 ± 10 IN-LBS DURING INSTALLATION.

