Converter Regulator Unit for Aviation

The Model 2037 Converter Regulator Unit (CRU) converts aircraft AC power to regulated 37 VDC power for the Electrical Flight Control System (EFCS) of the SAAB JAS 39 "Gripen" Fighter Aircraft, from a three-phase, AC power generated by a Permanent Magnet Generator (PMG). The voltage and frequency of this PMG varies as a function of engine speed.

This lightweight CRU has been especially designed to fulfill exceptional reliability demands. To achieve a high MTBF, the principle of "Magnetic Amplifier" has been chosen, which was an extraordinary challenge for the engineering since weight was also a critical issue.

The unit meets all environmental requirements of common military standards for airborne equipment and is fully qualified in accordance with equipment specification based on MIL-STDs.

Since cooling is provided by thermal conduction via the ground plate (no fan), the CRU is absolutely maintenance-free. Based on our ILS-Department’s extensive know-how, we are able to offer complete ILS packages.

For Military Aircraft

Standard Features
- Completely qualified
- Short-circuit protected
- No fans
- Low weight and size
- High reliability

Application
- Military aircraft

Support Service
- Complete Integrated Logistic Support (ILS)
**Electrical Specifications**

**Input**
Voltage .................. 80 to 130 Vrms
Frequency ............... 2400 to 4000 Hz

**Output**
Voltage .................. 37 VDC, ± 2 V
Power ...................... 620 W continuously,
                        1000 W peak (0.5 s)
Overload .................. Fully protected against shorts and
                        overload with automatic recovery
Efficiency .................. ≥ 90% at max. load (100% PMG speed)

**Environmental Specification**
Temperature range ...... -40°C to +80°C (operation)
                        -55°C to +80°C (storage)
Humidity .................. 95% max.
                        (MIL-STD 810 C, M 507.1, Pr. II)
Shock ...................... 30 g/2.5 ms, 11 g/20 ms
Bump ...................... 25 g/6 ms

Vibration .................. Random, 10-2000 Hz/10 g
                        Gun fire 10-2000 Hz/15 g
Altitude .................. 9 kPa continuously, 4.5 kPa for 5 min.
EMC ...................... Acc. to MIL-STD 461B, CE03, CE07,
                        RE02, RS02, RS03, RS08
Protection .................. IP 66 according to DIN 40050

**Physical Characteristics**
Dimensions ................ Height 100 mm
                        Width 145 mm
                        Depth 184 mm
Weight ..................... 2.975 kg
Interface .................. Military qualified connectors (MS)

**Design Characteristics**
MTBF ..................... > 130,000 h
Qualification ............ Fully qualified in accordance with
                        equipment specification,
                        based on MIL-STDs