Sinepower has been developing and manufacturing 400Hz solid state Frequency Converters for more than a decade now.

Our policy has always been, to offer the best designed products that are environmentally friendly, simple to use, easy to maintain and exceptionally well manufactured thus meeting our clients requirements as well as complying with all standards and legislation.

Sinepower’s GPU units were designed with Power factor correction to guarantee a perfect sinusoidal input current from 25% to 150% load and a low THDi (<1.5%).

Sinepower ensure high quality, efficient and secure electrical power supplies.
As a result of our constant development efforts, we have launched our latest GPU units, that are an extension of our 400Hz solid state frequency converter range and are the safest and most reliable solution for your aircraft power supply.

Our design team have focused their efforts on developing a highly efficient and fully compliant GPU unit with many features.

- **CE Mark Certified** - EN61000-6-4 Electromagnetic compatibility - Generic emission standard; EN61000-6-2 Electromagnetic compatibility - Generic immunity standard; Low Voltage Directive (LVD) 2006/95/EC
- **State of the art semiconductor technology** (IGBT) guarantee **Unity Power Factor** and **Low Input Harmonics** (THDi < 1.5%)
- **High Efficiency** (up to 95% efficiency)
- **Voltage compensation** (Load Dependent or via Remote Feedback)
- **No Break Power Transfer compatibility** (NBPT)
- **User friendly control panel**
- **Data logging**
- **IP54 enclosures** for outdoor use in extreme environmental conditions
- **28 VDC, 600 A output | 2000 A Crank** with DC and AC output working simultaneously
- **Green Standby Function** (20W power consumption when GSF is activated)
- **Low noise emission** (<65dBA@1m)
POWER QUALITY

INPUT
- State of the art semiconductor technology (IGBT) Rectifier
- Power Factor Correction (PF = 1)
- 95% efficiency
- 4 Quadrant Operation (better response of the system and safer operation for NBPT)
- Low input harmonics (<1.5% THDI), to comply with the strictest regulations @ any load.

OUTPUT
- Voltage compensation (Load Dependent or via Remote Feedback – Real PLUG & PLAY connect GPU to aircraft and voltage compensation is done automatically, no user adjustment required or additional accessories)
- 4 Quadrant Operation (better response of the system and safer operation for NBPT)
- Vector control Inverter for better response and higher efficiency.

EFFICIENCY
- Up to 94% - 30KVA to 90kVA @ load PF = 0.8 to 1.0
- 90% - < 30 kVA @ load PF = 0.8 to 1.0
- Green Standby Function - losses: 20 W
- No load losses: < 1.5 kW.

PROTECTION AND SAFETY
- Enclosure Protection class up to IP55
- No break power transfer compatibility (NBPT)
- Over/under voltage at output
- Overload capability designed for:
  - Power stage 150% - Continuous
  - Magnetics 120% - Continuous
- Regulator Overload protections set at:
  - 120% for 600 seconds
  - 150% for 60 seconds
  - 200% for 2 seconds
- Variable fan speed for internal temperature control
- Over temperature protection
- Short circuit proof by electric current limiting and shutdown
- 90% switch interlock
- Neutral voltage supervision
- Broken neutral supervision
- Leakage current supervision.

OPTIONAL FEATURES
- Output
  • 28 VDC, 600 A output | 2000 A Crank (DC and AC simultaneous output)
  • Dual output (400Hz)
- Communications
  • Monitoring by Web and SNMP
  • MODBUS Rs485
  • MODBUS TC/IP
  • Remote control box
  • Billing System
- Military Interlock

NORMS AND STANDARDS
- ISO 6858:2017
- MIL-STD-704F:2004
- SAE ARP 5015B:2018
- IEC 62040-1:2008
- IEC 61558-2-6:2009
- IEC 61000-6-4:2011
- IEC 61000-6-2:2016
- SAE ARP 5015B:2018

MISCELLANEOUS
- MTTR: 20 minutes

INTERFACE AND COMMUNICATIONS
- RS232
**SINE33GPU**
120, 150 & 180 KVA SOLID STATE
400HZ GROUND POWER UNIT

**INPUT**
- 3 phase 400V/415V AC ±15%*
- 45Hz up to 65Hz
- Input current harmonics <2% @ 100% load

**OUTPUT**
- 3 phase 200V AC -400Hz ±1%*
- Overall Efficiency 90%-95%
- Max. Crest Factor 1.4:1

**RECTIFIER**
- 4 Quadrant Operation
- AC Voltage Range -25% +10%
- Efficiency %95-97%
- Input Frequency Deviation 10%
- Overload Capacity 120% Continuous
- Inrush Current None
- Overall current limit 150%

**ENVIRONMENTAL CONDITIONS**
- Temperature range:
  - Sea Level -40°C to +50 °C(@100% Load)
  - Above 2000m 30 °C (@100% Load)
- Relative Humidity 0%-90% without condensation
- Noise Level <65 dBA@1 meter
- Altitude up to 2500 m without de-rating

**INVERTER**
- Static Regulation 0 - 100% load ±1%
- Dynamic regulation 100% 5%,recovering to 1% within 20ms
- Total harmonic distortion Better than 3% (Linear Load)
- Electronic Limit Overload 120%@60s; 150%@60s; 200%@5s*
- Overload Capacity (IGBTs) 150% Continuous
- Frequency stability ±0.01% Crystal Controlled
- Load power factor 0-1
- Efficiency 95%-98%
- Short circuit proof by electric current limiting and shutdown

* Other voltages and frequencies available on request
* Other Electronic Overload limits available on request

**TECHNICAL DRAWINGS**

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Environments and decorative details in this catalogue have an informative purpose only. Result of Sinepower investment in research and development, the range can be subject of improvements. Therefore we reserve the right to change features and equipment in this catalogue without notice.

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