

## SPGPU SERIES

The SPGPU series of frequency converters utilise the latest in power conversion switching technology to provide aircraft with an extremely flexible and cost effective 400Hz power source for installation at convenient "point of use" locations and in avionics workshops, aircraft maintenance hangars and test laboratories where low noise, ease of use and compact dimensions are demanded. In contrast to 400Hz systems, found in many older airports, the SPGPU frequency converters have an inherently high power factor of up to 0.95 with a sine wave input low harmonics rectifier input stage. The inverter is an advanced design using high frequency pulse width modulation producing a sine wave output through an integral isolation transformer and via a circuit breaker for indoor use, or with optional contactors for outdoor use.

The frequency converter can be delivered with a single output or dual output circuits and fitted with industrial type of multiple socket outlets or could be supplied with flexible 400Hz and or 28 VDC power cables and supplementary sensing fitted with standard aircraft power connectors. The frequency converters are supplied with 200V three phase output. The basic mechanical construction is in vertical format with ingress protection IP20 with optional IP42 and IP54.

- ▶ Analogue supplementary metering
- ▶ 50 / 60Hz input frequency
- ▶ Output contractor with interlocking
- ▶ Output 400Hz and/or 28vDC flexible cable with aircraft connector
- ▶ No break power transfer to aircraft service
- ▶ Remote monitoring by interface PCB
- ▶ RS232 remote monitoring by computer
- ▶ Ingress protection of up to IP54
- ▶ Line drop compensation
- ▶ Special paint colours and finish, on request



## TECHNICAL DATA SPGPU SERIES 400HZ & 28VDC COMBINED GPU

### RECTIFIER

Nominal input voltage:	380, 400, 415, 440, 480 & 690 VAC three-phase
Voltage tolerance	+10% or -15%
Frequency:	45 to 65 Hz
Power factor:	≥ 0.95 at 100% load
Current harmonic distortion, (THDi):	<2%
Soft start 0 to 100% in:	60 seconds, adjustable

### INVERTER

Rated output power, (kVA):	30, 45, 60, 90 & 120
Nominal output voltage:	200/115 Vac 3Ph + N "Y" Static stability,± 1%
Dynamic stability:	± 5%
Voltage distortion with linear load:	<3%
Voltage distortion with non-linear load:	<4%
Frequency:	400 Hz
Crest factor, (I peak/I rms):	1.4:1
Overload	In. x 1.1 for 60minutes, In. x 1.25 for 10 minutes, In. x 1.5 for 50 seconds In. x 1.7 for 5 seconds In. x 2.0 for 1 second
Efficiency:	Up to 95%

### DC STARTER

#### Output

Voltage:	28VDC
Continuous Current Capacity:	600amps
Maximum Current Limit:	2,000 amps for up to 5 seconds
Voltage regulation up to 600A:	± 0.5%
Efficiency (at 600A):	90%
Ripple:	<0.5%
Dynamic recovery to 90% VDC	<40ms
Voltage compensation:	0-4V up to 600amps (remote feedback)
Galvanic Isolation:	800Hz Transformer
IGBT + DIODE Rectifier	

### METERING, STATUS, SIGNALLING AND ALARMS.

Digital metering by LCD panel  
Menu and keypad for diagnostics and data logging Remote signalling Voltage-free contacts  
Remote commands EPO and ON/OFF  
Communication RS232

### DIMENSIONS AND WEIGHT, IP20

Dimensions, (w x d x h) (mm) 750 x 710 x 1,250

#### Weight (kg) Approx.\*

30kVA	470
45kVA	510
60kVA	550
90kVA	600
120kVA	750

\*Weights are based on the 1,000starting amp version. For the 2,000amp version please add 40kg

## OPERATIONAL ENVIRONMENT

Noise level,:	<63 dBA at 1 m
Operating ambient temperature:	-40 °C to 50 °C 35° C above 2,000 mtrs
Relative humidity:	<95% non-condensing
Ingress protection degree:	IP20 as standard, option of IP54 available
Colour:	Light grey (RAL 7035)
Finish:	light textured Standards compliance

> DFS400 Specification for 400 Hz aircraft power	
ISO 6858	Aircraft ground support electric supplies
BS 2G 219	General requirements for ground support equipment
MIL-STD-704	Aircraft electric power characteristics
SAE ARP 5015	Ground equipment 400 Hz ground power performance requirement
EN62040-1-1	General & safety requirement
EN61558-2-6	General & safety requirement
EN61000-6-4	Electromagnetic compatibility - Generic emission standard
EN61000-6-2	Electromagnetic compatibility - Generic immunity standard