



One of a batch of 90 kVA converters installed at Bristol airport

400Hz static frequency converters

Powervamp converters stand alongside those of the world's leading manufacturers in quality and performance, with a superb reputation when it comes to product reliability, support and service. Unlike converters derived from 50/60Hz systems, Powervamp units are designed from conception to operate continuously at the demanding 400Hz frequency.

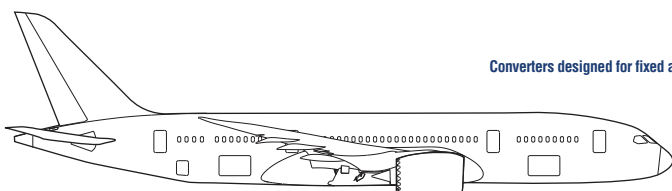
Powervamp converter reliability starts with Powervamp's software design team and full in-house manufacturing with intensive quality control – from initial design to finished product. The full range of converters, from 30 to 90kVA, is supported worldwide by the company's Technical Services Department and team of skilled graduate engineers, covering technical issues from power requirement and architects' drawings to installation and service contracts.

Housed in IP65 cabinets as standard, Powervamp converters use forced airflow with oversized heat sinking to maintain a stable temperature of the power electronics, crucial to the maintaining of continuous output at maximum load. Integral input and output EMC filters guarantee minimum distortion from the mains supply. Top wave form quality ensures compliance with the tight sine wave demands of modern aircraft.

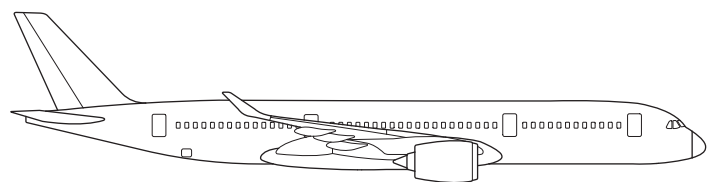
Where operators require both AC and DC power, Powervamp offers a separate stand-alone module which gives operators the flexibility to move the DC unit to different aircraft stands. For hangar installation, an integral unit is available.

A PFC rectifier converts three-phase into DC, with the PWM (Pulse-Width Modulation) inverter switching the DC back to AC at 115/200V 400Hz. The output transformer provides galvanic isolation between the input and the output. The 28V DC module can be directly coupled to the GPU 400Hz output through an adaptor plate thereby minimising investment costs.

Powervamp converters utilise electronic rectifiers with power factor correction to ensure that current drawn from the mains is perfectly in phase with the voltage (0.99pF @ full load), giving high efficiency compared to non PF corrected systems. Converters are designed for continuous operation at full load with the microprocessor controlled PWM IGBT inverter sized to accept high overload. Components and designs are sized for 100,000 hours MTBF.



Converters designed for fixed and mobile units for major airlines, airports, MROs and airshows





Powervamp's 90 kVA converter delivering top-quality stabilised power to the flightdeck of a Boeing 747-8
Photo © Powervamp 2011

90 kVA showing MABS ethernet connection (see page 26)

SPECIFICATION

INPUT

Mains supply voltage	400V AC +/- 10% 3-phases
Mains supply frequency	50 or 60Hz +/- 5%
Power factor	0.99pF @ full load
Input protection	MCB to BS EN60898
Fusegear	gR to IEC 60269-1 and -4, DIN VDE 0636-23 DC Over-voltage
Protections	Mains low Input surge
Technology	Full wave controlled thyristor/diode bridge with IGBT power factor correction

OUTPUT

Voltage	115/200V AC 3-ph
Voltage regulation	Static +/- 1%, Dynamic +/- 6%
Voltage waveform	Sinusoidal
Frequency	400Hz +/- 0.1%
Distortion (THD)	<3% into linear load
Load power factor	0.3 lag to 0.3 lead
Crest factor	3:1
Overload (kVA)	120% continuous, 121% for 2 min, 160% for 5 sec Electronic overload/short circuit Over-temperature
Protections	Inverter over/under voltage Low voltage shutdown
Technology	High frequency, pulse width modulated IGBT with isolation transformer

Dimensions (basic unit)

	Height	Length	Width	Weight
PVC20	1000mm (39in)	800mm (32in)	550mm (22in)	350kg (772lbs)
PVC40	1000mm (39in)	800mm (32in)	550mm (22in)	450kg (992lbs)
PVC60	1400mm (55in)	1100mm (43in)	800mm (32in)	600kg (1,322lbs)
PVC90	1400mm (55in)	1100mm (43in)	800mm (32in)	700kg (1,543lbs)

FEATURES

- 115/200V 400Hz aircraft GPU
- Large range of 400Hz power: from 20kVA up to 90kVA
- Optional 28V DC external module available – up to 600A continuous and 2000A peak for more versatility
- Worldwide input voltage 200–480V
- High quality sine wave output and reliability
- Galvanic isolation with grounded neutral
- Both civil and military aircraft interlocks
- High-quality steel/aluminium enclosure to handle all-weather conditions
- Cable entry at the rear with removable gland plates to allow simple installation
- Castors for easy positioning
- Protection against DC over-voltage, input mains low and main surges
- Removable panel and hinge for easy access and service
- Full datasheet and instructions available upon request

OPTIONS:

- Heavy-duty 4-wheel ramp trolley with cable stowage and tow hitch



40 kVA fixed hangar power