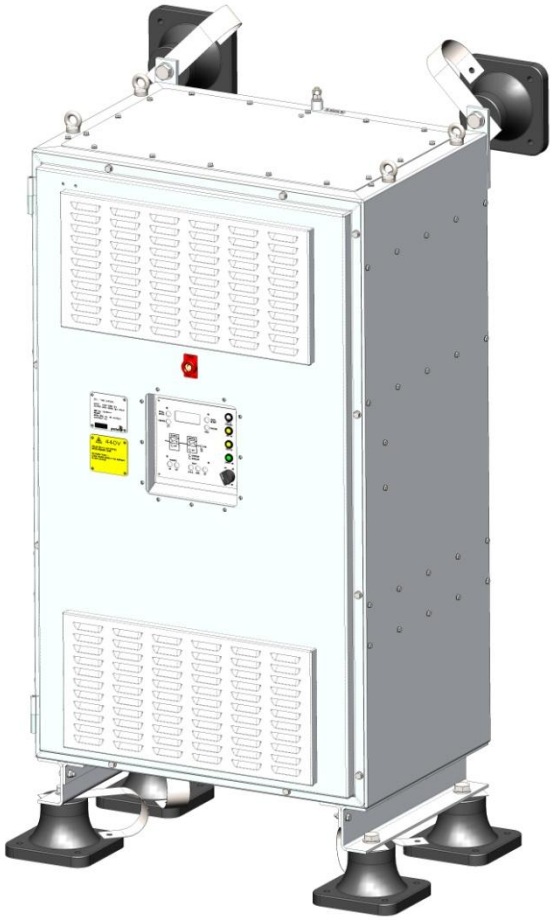
Static Frequency Converters 3CT Range



The 3CT Range of Static Frequency Converters (SFCs) are designed to supply 3 phase(4wire) 200V, 400Hz to aircraft loads with low distortion and high stability when connected to the ships' main 440 volt 3 phase 60Hz supply.

Alternatively the outputs can be configured to supply 3phase (3 wire) 115V, 400Hz for ships loads.

As required for naval applications the SFC is designed to meet the necessary ruggedness in terms of shock and vibration and naval EMC requirements.

The SFCs consist of a rectifier and an inverter.

The rectifier converts the incoming ac supply to an internal DC voltage. It is a rugged thyristor rectifier with a typical input current THD of 14% and power factor of 0.9 at full load.

The inverter converts the internal DC voltage to the 400Hz ac output. It is a three phase high frequency PWM IGBT inverter and has an isolation transformer to provide full galvanic isolation between input and output.

The SFC can also be configured with internal contactors to control the output to either hangar or flight deck socket boxes if required.

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ELECTRICAL CHARACTERISTICS

Input
440 volts 3 phase 3 wire 60Hz in accordance with STANAG 1008 Edition 9

Option: Alternative input supply
Option: Anti-condensation heater 115V or 230V

Output
200V line/115Vphase, 3 phase, 4wire, 400Hz,
or 115V line, 3phase, 3 wire 400Hz

Waveform	Sinusoidal
THD(linear load)	<3%
Static voltage regulation	± 1%
Dynamic voltage regulation	± 6%
Load power factor	0.3 lag to 0.3 lead
Crest factor	3:1
Frequency stability	± 0.1%.

Options: Earth isolation monitor, Internal output contactors

Load
5, 10, 15, 20, 30, 40kVA

Efficiency >85%

Protection
Input fused. Output short circuit and over current protection. Over/under voltage, Over temperature, Output phase failure.

Local Controls and Indications.
Supply ON/OFF selector switch
Supply available LED
Output Available LED
Fan fail LED
Mimic with diagnostic display
Other user specific requirements can be accommodated

Remote Indications.
Fault, Output ON, and Alarm remote indication by means of volt free contacts.

ENVIRONMENTAL CHARACTERISTICS

Shock
Designed to meet a shock requirement of a maximum vertical acceleration (half sine-wave pulse) of amplitude 117.7m/s2 (12g) and of duration 9ms (rise time to peak velocity) and 24ms (fall time to zero velocity). For installed shock levels in excess of this shock mounts should be fitted.

Vibration
The unit, when 'hard' mounted, is designed to meet shipboard vibration. Typically: 5 to 33Hz +/- 0.125mm

Noise
< 65dbA. @ 1m

Electromagnetic Compatibility.
The equipment is designed to comply with the requirements of Def Stan 59-41.Emissions and susceptibility (Below deck limits)

Ambient Temperature.
0°C to + 45°C.

Relative Humidity
10% to 95% non-condensing.
All PCBs have a conformal coat to protect against the effects of condensation.

Ships Motion
The equipment is designed to withstand, without damage or degradation of performance or spillage of fluids, ship motion due to the action of the sea and weather as well as accelerations and velocities deriving from deliberate ship manoeuvres. Typically:

Roll angles	± 30°
Pitch angles	± 10°
Steady list angles	± 15°
Steady trim angles	± 5°

MECHANICAL FEATURES

Enclosure
Fabricated mild steel folded and welded for strength. Deck mounted with top steadies. Lifting eyes are provided.

Cable Entry
Top/bottom via gland plate. User connections are made to internal rail mounted and stud terminals. Access for the cables is by a gland plate that can be drilled or punched as required for glands.

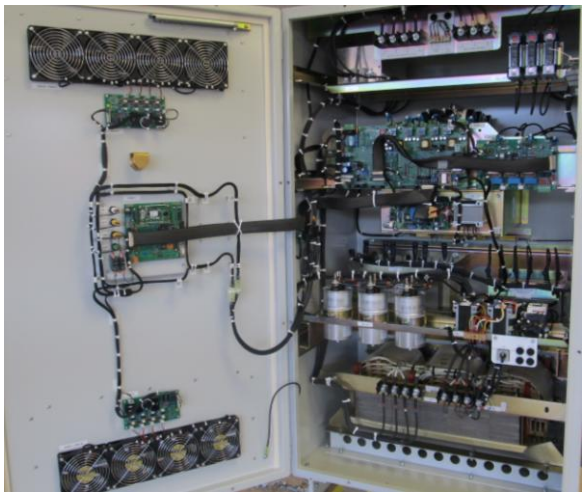
Ingress Protection Rating
IP23 suitable for electrical equipment compartment
IP54 suitable for machinery spaces

Cooling
The Static Frequency Converter is designed for natural cooling by convection and louvres of sufficient size are provided for this purpose. Individual cooling fans for power assemblies are provided. Unrestricted airflow should be allowed around the unit.

Maintenance
Front maintenance – Lift off hinged door for access.

Internal wiring
Low fire hazard cross linked polyolefin RADOX 125.

Earth
For safety the chassis of the Static Frequency Converters must be earthed. An external M10 (x1.5) earth stud is situated adjacent to the gland plate.



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