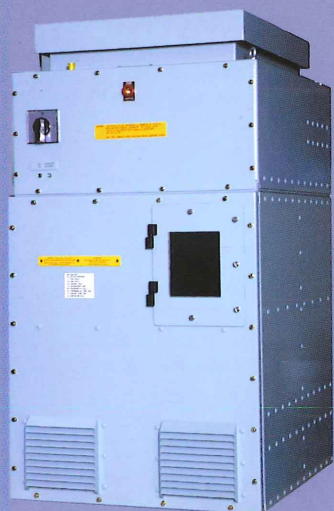


Static Frequency Converters (SFC)

- 10kVA – 160kVA power range
- Designed for naval environment
- High power density
- Simple to operate
- Low through life costs
- High reliability
- Increased availability
- Low maintenance requirement
- Built-in diagnostics
- De-risked technology
- Modular design
- Latest IGBT technology

The defence power systems business unit of PMES is an established supplier of innovative high technology power conversion and control systems for defence applications worldwide.

The PMES range of 400Hz SFCs are designed specifically for naval ship-board applications, giving them a reliability and compatibility in this harsh environment well in excess of commercial equivalents. Key aspects of this design include: EMC compliance, climatic rating, mechanical construction to withstand severe shock and vibration, operational reliability and a greater flexibility to meet non-standard requirements.



Typical specification

40kVA Static Frequency Converter

Electrical

Input: 440 V, 60 Hz, 3 phase
 Related specs: STANAG 1008 and Def Stan 61-5

Output: 200V, 400Hz,
 3 phase, 4 wire
 Rating 40kVA
 Related specs: BS 2G 219

ACH Supply: 115V, 60Hz, 1 phase

Environment

Temperature: 1 to 45°C

Shock: Designed for 15g operational

EMC: Def Stan 59-41 Part 4 (below decks)

Parallel capability: The outputs of a pair of converters can be connected in parallel, without the need for external components, giving an 80kVA rated supply

Mechanical

Dimensions: 1300 mm(h), 700 mm(w), 875 mm(d)
 If shock mounts are required, four X-mounts may be fitted on the bottom of the SFC. Two X-mounts are fitted at the rear of the cubicle

Mass: 500 kg

Maintenance envelope: Front access via fixed doors

Instrumentation: Option for voltage and current meters

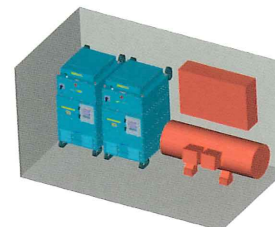
Enclosure: IP23

Cable entry: Top entry

Lifting eyes: Four lifting eyes at top of cubicle

Cooling requirements: The converter is forced air-cooled. No services are required

Wild heat: < 4 kW



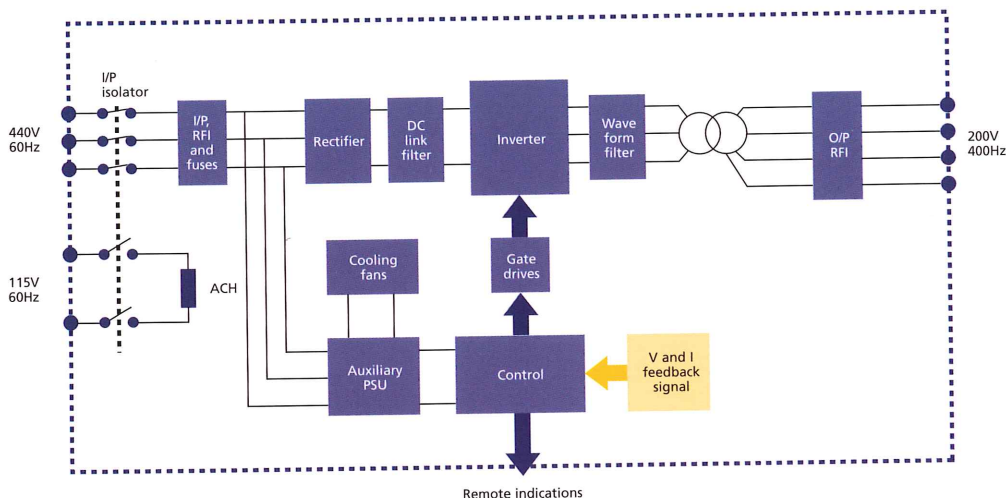
Space-saving or enhanced capability

The above illustration shows a pair of 40kVA SFCs, working in parallel to provide 80kVA of power in the same space envelope as a single 40kVA rotary set and its associated control panel. A single, like-for-like replacement SFC requires approximately half the floor and wall space that the equivalent rotary converter set occupies, and is roughly half the weight.

Superior technology

The main advantages of a Static Converter compared to a Rotary Converter for marine applications include:

- Lower through-life costs with greatly reduced routine maintenance
- High availability (high MTBF and low MTTR)
- Simple to operate, plus in-built diagnostics to speed repair
- Modular construction: repair by interchangeable sub-module replacement
- Low weight (40kVA Rotary Converter 1060kg, Static Converter 550kg)
- Front access only (reduced maintenance envelope)
- Low audible and structure-borne noise profiles
- Flexibility of location in platform



Block diagram of 400Hz Static Frequency Converter



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