Technical Specifications: ***2000 Series***

	SFC 2060	SFC 2100	SFC 2150	SFC 2200	SFC 2300	SFC 2500
Power:	600VA	1000VA	1500VA	2000VA	3000VA	5000VA
Input:	230V or 115V +/-15% or Universal (90-265V). 50 or 60Hz or Universal (44-400Hz).					
Output:	Sinusoidal THD < 5%. 50/60/400Hz +/-0.5%. 110/115/120/220/230/240V +/-3%.					
Dimensions:	H280 W185 D380mm →					H320 W250 D420mm
Environment:	-5 to 40 deg.C up to 1000m altitude. Humidity <90% non-condensing, EMC EN55-022B					
Weight:	11Kg	12Kg	14Kg	16Kg	21Kg	26Kg

5000 Series

	SFC 5080	SFC 5100	SFC 5120	SFC 5150	SFC 5200	SFC 5250
Power:	8KVA	10KVA	12.5KVA	15KVA	20KVA	25KVA
Input:	230V or 115V Single Phase or 400V 3-Phase +/-15%, 50 or 60Hz					
Output:	Sinusoidal THD < 5%. 110/115/120/220/230/240V +/-2% 1-Ph, 50/60/400Hz +/-0.5%					
Dimensions:	H600 W310 D750mm		H720 W360 D850mm →			
Environment:	-5 to 40 deg.C up to 1000m altitude. Humidity <90% non-condensing, EMC EN55-022B					
Weight:	82Kg	125Kg	142Kg	151Kg	190Kg	230Kg

6000 Series

	6004	6006	6008	6010	6012	6015	6020	6025	6030	6040
Power:	4KVA	6KVA	8KVA	10KVA	12.5KVA	15KVA	20KVA	25KVA	30KVA	40KVA
Input:	400V or 208V, 3-phase, 50 or 60Hz. (Smaller units with 1-phase input to order).									
Output:	230/400V or 115/200V or 253/440V, 3-phase, +/- 2%. 50/60/400Hz +/-0.5%									
Dimensions:	H750 W360 D850mm →							H1100 W420 D850mm →		
Environment:	-5 to 40 deg.C up to 1000m altitude. Humidity <90% non-condensing, EMC EN55-022B									
Weight:	55Kg	74Kg	92Kg	138Kg	163Kg	184Kg	224Kg	248Kg	290Kg	355Kg

Build-To-Order and Specials:
Failsafe provides a full build-to-order service. This may vary from a simple colour change to a fully approved military device. Special voltages/cabinets/connectors/colours/meters represent just a fraction of what is possible. Clients are invited to personally witness factory testing of their special unit before taking delivery.


60KVA Aircraft GPU


Weather Proof Cabinet With Multiple Outputs


Test Facility Model with Variable Output Voltage


Military Standard

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Static Frequency Converters

Type ***SFC 2000, 5000 & 6000*** Series

600VA to 60KVA

Single and Three Phase 50, 60 & 400Hz

Failsafe
Power Converters

CE

NQA ISO 9001 REGISTERED COMPANY — NATIONAL ACCREDITATION OF CERTIFICATION BODIES

Frequency Converters

Failsafe *SFC* Series Frequency Converters - Flexible, Compact and Cost Effective Frequency Conversion.

- q Continuous Duty Frequency Conversion
- q Fixed Output Voltage & Frequency
- q 50, 60 and 400Hz Models
- q Universal Input Option
- q 22 Models From 600VA to 60KVA
- q Power Factor Corrected Input
- q Galvanically Isolated Output
- q Convert Voltage *and* Frequency

What Are Frequency Converters For?

The utility (mains) supply in North America has a frequency of 60Hz, but in Europe it is 50Hz and elsewhere in the world it may be either. Therefore any equipment designed for a 60Hz market-place may malfunction if used directly in a 50Hz country (and vice versa).

In addition most aircraft operate at 400Hz and therefore all equipment destined to be fitted to an aircraft, from microwave ovens to missile launch systems, must use this frequency.

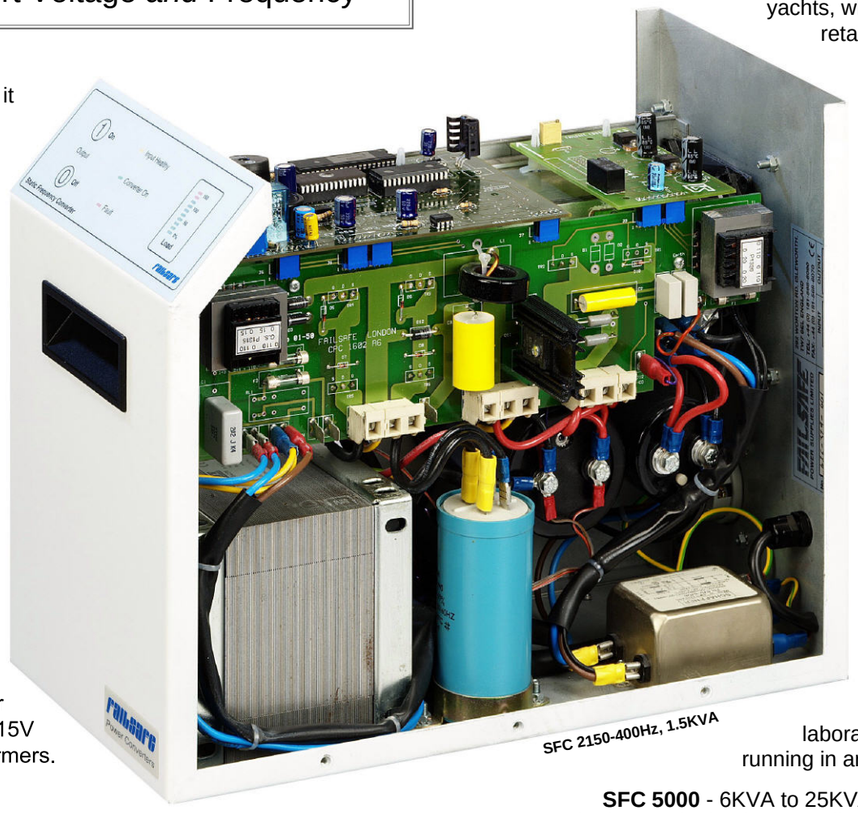
Thus frequency converters are used to convert a utility (mains) supply of one frequency to the correct frequency for the piece of equipment to be connected.

Examples of this would be avionics equipment designed for 400Hz, being tested in a laboratory with a 50Hz mains supply, or perhaps a conveyor belt production line designed in a 60Hz country but destined for a 50Hz market place. In both these situations a frequency converter may be used to solve the connectivity problem.

Testing of avionics equipment needs 400Hz

Not Just Frequency - Voltage Too!

Failsafe frequency converters offer an additional advantage in that they are able to convert not only frequency, but voltage as well. Therefore they are able to offer a *complete solution* in one unit (for example, converting 230V/50Hz to perhaps 115V at 400Hz), thus eliminating the need for costly step-up or step-down transformers.



SFC 2150-400Hz, 1.5KVA

Universal Input:

As an option, most models within the *SFC* family are available with a wide range, universal input. Such units will operate (automatically) from almost any globally available utility supply, and still give the same output. For example, an *SFC 2500* with say a 115V, 60Hz output could be connected to any frequency between 44 and 420Hz and any voltage between 90 and 265V, yet always output 115V/60Hz. This is a particularly useful feature for mobile applications such as large motor cruisers and yachts, which need to be able to 'plug-in' to any shore supply that they might come across while retaining the same supply on board.

High Efficiency - Continuously Rated:

State of the art MOSFET and IGBT technology is used in the inverter section of Failsafe *SFC* converters resulting in very low losses and hence low running costs. In addition, all *SFC* models are able to supply up to three times their nominal maximum power for short periods, eliminating the need to oversize units to allow for commonly encountered start-up currents.

Continuous rating allows *SFC* models to be treated in the same way as one would treat a utility supply.

The universal input option suits many *mobile* applications from motor cruisers to touring rock bands.....

Simple, Clear Controls:

All models are very simple to operate with just the one On/Off control, LEDs to indicate the operating status and meters to indicate the output voltage, current (LED load meter on *SFC 2000* series) and frequency (optional).

Three Ranges To Choose From:

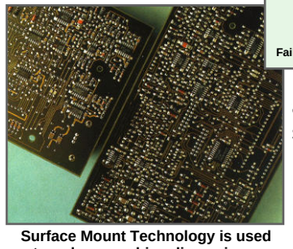
SFC 2000 - 600VA to 5KVA Single Phase:

These compact, desk-top converters are perfect for operating equipment on a production line or in a laboratory. They are simple to install and use, near silent in operation and capable of running running in arduous, continuous duty operations. **19" Rack versions** are also available.

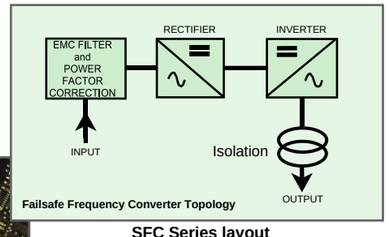
Composition:

Although differing greatly in power rating, the topology of all three *SFC* ranges is similar: The *Input* supply is initially passed through a sophisticated power factor correction *(PFC)* and EMC circuit. This makes sure that all models have an input power factor of close to unity, thus maximising efficiency and also meeting all European Union energy saving standards.

In combination with the *PFC* section the rectifier then converts the *Input AC* supply in to a regulated DC Bus. This in turn is synthesised back into a pure sinusoidal waveform (at the new frequency) by a state of the art IGBT based inverter.



Surface Mount Technology is used to reduce machine dimensions.



SFC Series layout

Finally the *output* is galvanically isolated from the *input* via an output isolation transformer and then fully protected by over-current and over-temperature sensors.

In this way the output frequency (and voltage if required) is unrelated to the input frequency, with negligible input frequency harmonics passing through the machine to the output.

SFC 5000 - 6KVA to 25KVA Single Phase:

For the larger single phase application, *SFC 5000* models are particularly useful when a high current *single phase* supply is required. All models are available with either a single phase or a three phase input, BS4343 connectors or hard wire terminals and the machine below is shown with optional lifting eyes.

- q Aircraft GPU
- q Avionics
- q Production Line
- q Military
- q Submersibles

SFC 5000 (with lifting eyes) & SFC 6000

- q Avionics
- q Mobile Displays
- q Production Testing
- q Imported Equipment
- q Specials

SFC 2000 Series

SFC 6000 - 4KVA to 60KVA Three Phase:

Suitable for all 3-phase applications, *SFC 6000* units combine robust electronics with heavy-duty construction to produce immensely durable machines capable of operating in the most severe industrial environment. Special versions are available for use in marine and in military applications.

failsafe