

PEVFC SERIES

Frequency Converters – Heavy Duty

Static Frequency Converters convert the source power with a specific input voltage and frequency in to a different output voltage and frequency depending on what the client requires. PEVFC series has a unique mechanical design together with a conformal coating on the printed circuit boards (PCBs), allow the unit to be prepared to the most adverse environments with high reliability.

PEVFC units are specially designed to harsh environments thus PCBs cards are fully coated with the latest high military and aerospace technology (IEC61086-1:2004,-3-1).

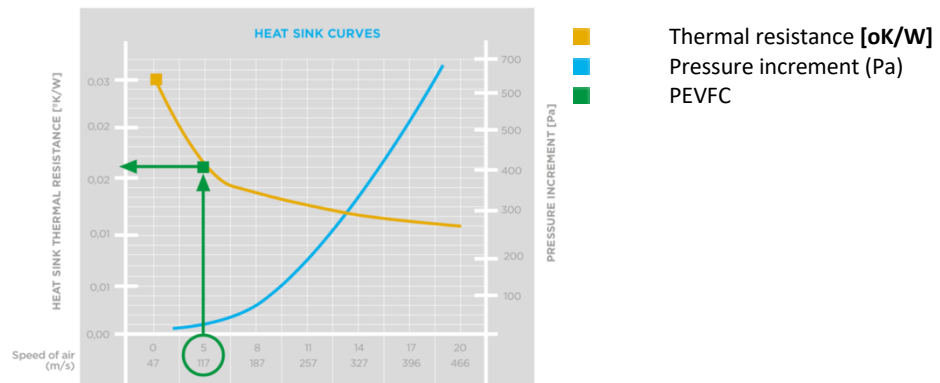
PEVFC IP54 versions have totally sealed electronics. The internal heat generated is evacuated through forced convection.

PEVFC cooling system uses efficient axial fans at low speed which provide three main benefits:

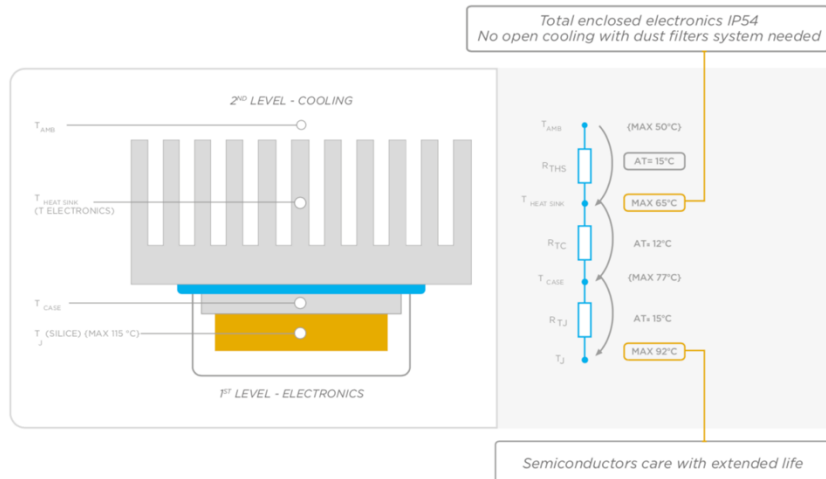
- > The internal dust deposition ratio in polluted environments (cement, mining, minerals, metal industry, etc) is significantly decreased at low air speeds, therefore the maintenance frequency is reduced.
- > The internal air pressure losses are reduced exponentially, increasing cooling system efficiency.
- > The sound levels are reduced in order to favor a comfortable operation.

The input filters are enclosed separately, optimizing their cooling capacity, degree of protection and increasing their long life operation.

The chart shows the influence of air speed in pressure losses and heat sink thermal resistance.



PEVFC truly offers operation up to 50°C due to oversized heat sinks with a junction temperature below 100°C and no power derating. Moreover, we adapt our products to worldwide operation under the most adverse conditions without supervision. We achieve this due to multiple internal temperature sensors and oversized heatsinks.



Technical Details

INPUT

3 phase 400V/415V AC	+/-10%
50.0Hz/60.0Hz	+/-10%
Input current harmonics	< 3% @ 100% load
State of the art semiconductor technology (IGBT) Rectifier	
Power Factor Correction (PF=1)	
4 Quadrant Operation (better response of the system and safer operation for NBPT)	
Low input harmonics (< 1.5 % THDi), to comply with the strictest regulations @ any load.	

OUTPUT

3 phase 200VAC/400VAC/480VAC	+/-1%
50Hz/60Hz	+/-1%
Overall Efficiency	94%
Max. Crest Factor	3:1
4 Quadrant Operation	
Vector control Inverter for better response and higher efficiency.	

RECTIFIER

4 Quadrant Operation	
AC Voltage Range	-20% +15%
Efficiency	97%
Overload Capacity	120% Continuous
Inrush Current	None
Overall current limit	150% Continuous

INVERTER

Static Regulation 0 - 100% load	+/-1%
Dynamic regulation 100%	5%, recovering to 1% within 40 ms
Total harmonic distortion	< 3% (Linear Load)
Electronic Limit Overload	120%@600s; 150%@60s; 200%@2s
Overload Capacity (IGBT's)	150% Continuous
Frequency stability	+/-0.01% Crystal Controlled
Load power factor	0-1
Efficiency	97%
Short circuit proof by electric current limiting and Shutdown	

ENVIRONMENTAL CONDITIONS

Temperature range sea level	-40°C to +50 °C (@100% Load)
Above 2000m	50 °C (@100% Load)
Relative Humidity	0%-90% without condensation
Noise Level	< 70 dBA@1 meter
Altitude	Up to 2000 m without de-rating
Efficiency	> Up to 95% No load losses: <2% of full Load
Interface and communications	RS232

PROTECTION AND SAFETY

- > Enclosure Protection class up to Ip54
- > Overload capability designed for:
 - > Over/under voltage at output
 - > Power stage 150% - Continuous
 - > Over temperature protection
- > Magnetics 120% - Continuous
- > Overload protections set at:
 - 120% for 600seconds
 - 150% for 60 seconds
 - 200% for 2 seconds

> Short circuit proof by electric current limiting and shutdown.