



MARPOWER SPC-II HYBRID

Eekels MarPower Shore Power Converters convert worldwide available shore voltages and frequencies into a reliable power source. This product series is designed to meet the most stringent requirements of demanding installers and professional users.

- Almost double the output power of the standard SPC-II
- Hybrid cooling: a combination of air and liquid cooling.
- Small size: up to 50% reduction compared to a transformer
- Low weight: up to 65% reduction compared to a transformer
- Redundancy
- Optimal logistics
- Worldwide service and support



SPC-II HYBRID Shore Power Converter

The MarPower SPC-II HYBRID is the ultimate alternative for isolation transformers due to its small size and extremely low weight and added functionality. The MarPower SPC-II HYBRID has all the benefits and features of the standard SPC-II, however, has a higher input voltages almost double the output power due to the use of a hybrid cooling system, while the size and weight are only increased marginally. Hybrid cooling is an innovative way of cooling, which uses both liquid cooling as well as air cooling. In case the liquid cooling fails, the unit can run with reduced power as a standard SPC-II.





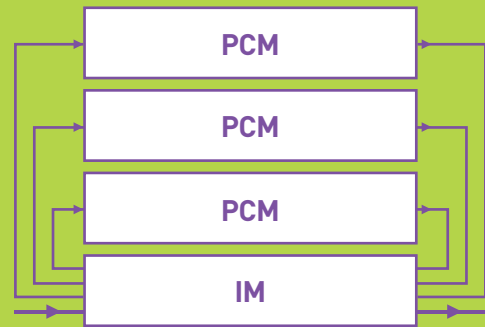
Due to its plug-and-play design the MarPower SPC-II HYBRID facilitates easy and flexible installation, operation and maintenance of shore power converter solutions. The modular concept makes it easy to upgrade or expand the system for future demands. In addition, this advanced solution provides the following benefits:

- Supports a wide variety of input voltages and frequencies
- Provides galvanic isolation for optimal safety
- Provides power conditioning of input power
- Supports from 40-300 kVA from a single system
- Supports up to 900 kVA from multiple system configuration
- Supports multiple shore cords from different dockside supplies, without feedback risks
- Support a variety of applications, including: Frequency Converter and Power Conditioner
- Extreme low heat dissipation to the air
- Contributes to overall system reliability and availability
- Seamless Power Transfer is a standard feature

System configuration

MarPower Shore Power Converter is a flexible and modular solution. The figure below shows a basic conversion system with a single shore cord input and a single connection towards the vessel.

- The PCM is the power converter module and available in a 40kVA, 50kVA and 70kVA configuration. These PCMs can be paralleled with a maximum of 15 units (5 per system).
 - The IM is the interface module and provides a safe and reliable way to distribute incoming and delivered power over individual PCMs with a maximum of 5 modules.
 - Single and Dual shore cord can be provided with optionally a switch to make the selection between the input cords. It also provides every powerblock on the input and output with a circuit breaker for safety and ability to disconnect a PCM to run on reduced power.
- [remark: the liquid cooling installation is not part of the delivery]



Specifications SPC-II HYBRID

Input		efficiency	>91%	
input line voltages	3 x 170 - 520V	power losses		
frequency range	40-70Hz			
input power factor	> 0,99 at full load	Interface / diagnostics		
input current	95A per power module	LCD display		
inrush current	< 100% at rated current	MOD bus	RTU	
earth leakage current	< 2 mA per power module	USB		
		hard wired IO	potential free contacts	
Output		Mechanical	Weight	Size [HxWxD] in mm**
output voltage	3 x 400V rms + neutral [50 Hz]	60kVA*	145 kg	390 x 800 x 660
	3 x 208V rms + neutral [50 Hz] [other voltages on request]	120kVA*	313 kg	945 x 800 x 660
output frequency	50 Hz [other frequencies on request]	180kVA*	453 kg	1245 x 800 x 660
nom. system power	40kVA-900kVA	240kVA*	595 kg	1645 x 800 x 660
nom. module power	50kVA / 60kVA at input voltage > 320V rms	300kVA*	735 kg	1945 x 800 x 660
power derating	at input voltage 170-350V current limit till 100A (without liquid cooling derating till 60%)	* U _{out} =400V cos phi=0.8		** W= excl.water valve
units in parallel	up to 15 modules	Cooling	forced air + valve controlled liquid	
overload	120% 15 min		(non corrosive, 5 ltr./min fl ow, 0 - 35°C dependant on coolant)	
	150% 1 min	Protection degree	IP22 (higher IP value on request)	
voltage distortion	< 3%	Temperature	0-45 degrees Celsius, above reduced power	
voltage variation	± 1% (at min max load)	Humidity	0 - 95% non condensing	
frequency accuracy	± 0,05% (at fi xed load)	Colour	Ral 9010 (other colours on request)	
		Noise	< 60dBA at 1 mtr	

