



FREEMAQ STATCOM

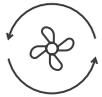
UTILITY SCALE STATIC COMPENSATOR



FIELD REPLACEABLE UNITS



MODULAR DESIGN



ICOOL 3



3 LEVEL TOPOLOGY



NEMA 3R / IP54

TAKING ADVANTAGE OF THE MOST FLEXIBLE 1500V INVERTER PLATFORM

Freemaq STATCOM is a high power, utility scale, modular static compensator. It is ideal for dynamic reactive response, VAR support and grid voltage stabilization in either industrial locations or distributed generators such as renewable energy plants. Its modular design and redundant topology make it the perfect solution for the most demanding installations. As an outdoor solution, it doesn't need to be installed in a technical room and neither does it need additional cooling thanks to its revolutionary iCOOL 3 system. It is available in 2 different frames ranging from 2300 kVAR to 3290 kVAR.

COMPACT DESIGN - EASY TO SERVICE

By providing full front access the Freemaq Statcom series simplifies the maintenance tasks, reducing the MTTR (and achieving a lower OPEX). The total access allows a fast swap of the FRUs without the need of qualified technical personnel.

With the Freemaq Statcom, Power Electronics offers its most compact solution, achieving 3290 kVAr in just 12ft long, reducing installation costs and labor time.



STRING CONCEPT POWER STAGES

The Freemaq Statcom combines the advantages of a central inverter with the modularity of the string inverters. Its power stages are designed to be easily replaceable on the field without the need of advanced technical service personnel, providing a safe, reliable and fast Plug&Play assembly system.



INNOVATIVE COOLING SYSTEM

Based on more than 3 years of experience with our MV Variable Speed Drive, the iCOOL3 system allows to get IP54 degree of protection in an outdoor converter. iCOOL3 delivers a constant stream of clean air to the FRUs, being the most effective way of reaching up to IP54 degree of protection,

without having to maintain cumbersome dust filters or having to use liquid-cooling systems, avoiding the commonly known inconveniences of it (complex maintenance, risk of leaks, higher number of components...), therefore resulting in an OPEX cost reduction.



ACTIVE HEATING

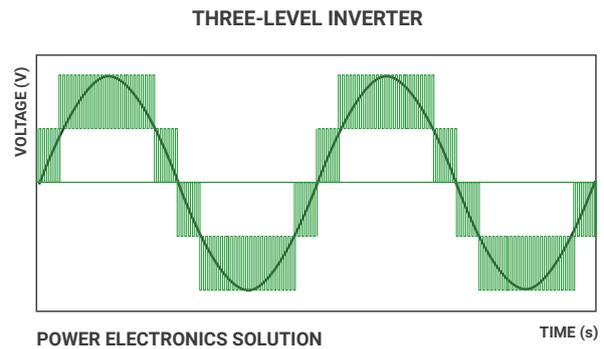
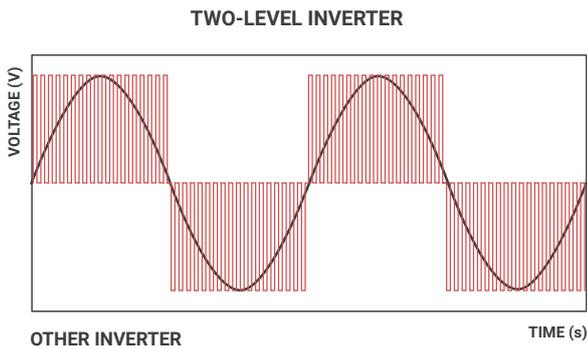
When the unit is not actively exporting power, the inverter can import a small amount of power to keep the inverter internal ambient temperature above -20°C , without using external resistors.

This autonomous heating system is the most efficient and homogeneous way to prevent condensation, increasing the inverters availability and reducing the maintenance. **PATENTED**

MULTILEVEL TOPOLOGY

The multilevel IGBT topology is the most efficient approach to manage high DC link voltages and makes the difference in the 1500 Vdc design. Power Electronics has many years of power design in both inverters and MV drives and the

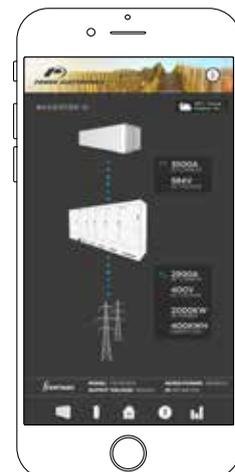
Freemaq Statcom design is the result of our experience with 3 level topologies. The 3 level IGBT topology reduces stage losses, increases inverter efficiency and minimizes total harmonic distortion.



EASY TO MONITOR

The Freesun app is the easiest way to monitor the status of our inverters. All our inverters come with built-in wifi, allowing remote connectivity to any smart device for detailed updates and information without the need to open cabinet doors.

The app user friendly interface allows quick and easy access to critical information (energy registers, production and events).



AVAILABLE INFORMATION	Grid and PV field data. Inverter and Power module data (Voltages, currents, power, temperatures, I/O status...) Weather conditions. Alarms and warnings events. Energy registers. Others.
FEATURES	Easy Wireless connection. Comprehensive interface. Real time data. Save and copy settings.
LANGUAGE	English, Spanish.
SYSTEM REQUIREMENTS	iOS or Android devices.
SETTINGS CONTROL	Yes

TECHNICAL CHARACTERISTICS

FREEMAQ STATCOM 690V

		FRAME 1	FRAME 2
NUMBER OF MODULES		4	6
REFERENCES		FT2300	FT3290
AC	AC Output Power (kVA/kW) @50°C ^[1]	2300	3290
	Max. AC Output Current (A)@50°C	1925	2750
	Operating Grid Voltage (VAC)	690V ±10%	
	Operating Grid Frequency (Hz)	50/60 Hz	
	Current Harmonic Distortion (THDi)	< 3% per IEEE519	
EFFICIENCY & AUX. SUPPLY	Efficiency (Max) (η)	98.8%	
	Max. Standby Consumption	< approx. 50W/per module	
CABINET	Dimensions [WxDxH] (ft)	9 x 7 x 7	12 x 7 x 7
	Dimensions [WxDxH] (m)	2.7 x 2.2 x 2.2	3.7 x 2.2 x 2.2
	Weight (lbs)	10802,65	15432,36
	Weight (kg)	4900	7000
	Type of ventilation	Forced air cooling	
ENVIRONMENT	Degree of protection	NEMA 3R - IP54	
	Permissible Ambient Temperature	-35°C ^[2] to +60°C, >50°C / Active Power derating (>50°C)	
	Relative Humidity	4% to 100% Condensing	
	Max. Altitude (above sea level)	2000m / >2000m power derating (Max. 4000m)	
	Noise level ^[3]	< 79 dBA	
CONTROL INTERFACE	Interface	Graphic Display (inside cabinet) / Optional Freesun App display	
	Communication protocol	Modbus TCP	
	Power Plant Controller	Optional. Third party SCADA systems supported	
	Keyed ON/OFF switch	Standard	
	Digital I/O	Optional	
	Analog I/O	Optional	
PROTECTIONS	Ground Fault Protection	Insulation monitoring device	
	Humidity control	Active Heating	
	General AC Protection & Disconn.	Circuit Breaker	
	Overvoltage Protection	Type 2	

[1] Values at 1.00·Vac nom and cos Φ= 1.
Consult Power Electronics for derating curves.

[2] Heating kit option required below -20°C.

[3] Sound pressure level at a distance of 1m from the rear part.