maXivar STANDARD

The Challenge

Whether connecting large mining loads or traction feeds or renewable generation or network strengthening, issues such as voltage control, grid code compliance, power factor correction and harmonics reduction, are becoming increasingly common challenges.

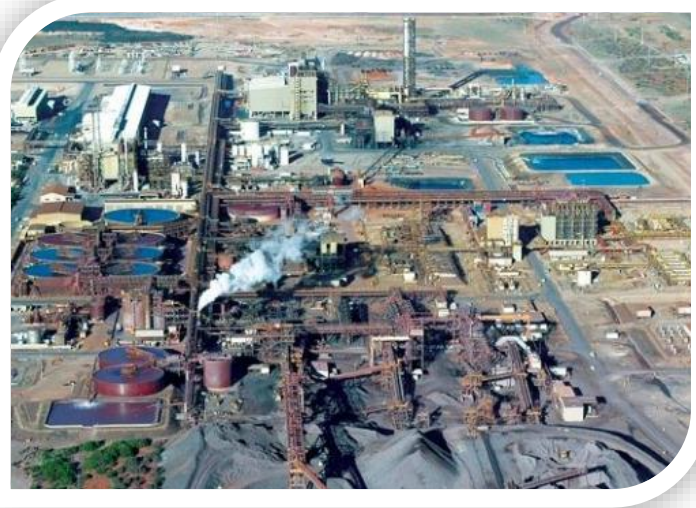
Due to remote locations or short implementation timescales, project developers and asset owners are often looking for solutions that can be thoroughly tested in the factory and rapidly deployed at site with minimal site hook-up and commissioning time.

The technical solution must therefore be robust and provide high levels of reliability preferably with built-in redundancy, along with ease of maintenance using locally available technical resource, and ready availability of spare parts. It should also be able to be connected to SCADA or EMS systems using standard industry protocols.

The maXivar STANDARD

Utilising Press Pack IGBT based power modules arranged in a chain link valve configuration for maximum reliability, along with control systems that have been proven in the most demanding of network applications, the Maxivar® STANDARD from RXPE provides a “plug and play” solution for industry packaged into a single easily installable enclosure.

The Maxivar® STANDARD ratings have been carefully chosen to address the requirements in the wind energy, mining sector, railway traction, and electricity network owners. Careful consideration of design features and supply chain sourcing, coupled with a robust and credible track record, means that this system can be deployed into the harshest environments with confidence.



The H-bridge multi-level converters with online redundant levels maintain rated output without interruption even in the event of the failure of one level. The failed power module can then be replaced easily and quickly during a planned maintenance outage by normal substation technicians. An additional feature is a de-rated capability should be a second failure within the same phase. This holistic approach maximises the overall system reliability and availability.

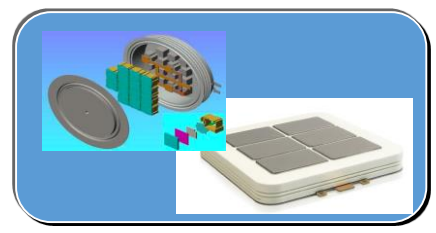
The proprietary control system is designed with open protocol communication interfaces such as IEC-104, IEC-61850, DNP3, Modbus and Profinet to allow the Maxivar® STANDARD to be easily integrated with the balance of the substation or electrical network, and to provide remote system monitoring and support where required. Advanced features such as active filtering, POD, SSR and SSO damping are also possible within the standard control functionality.

Each Maxivar® STANDARD can easily achieve common grid code compliance and typical LVRT requirements, and are designed and tested to the latest relevant standards: IEC, BS, AS/NZS etc.

The Press Pack IGBT Difference

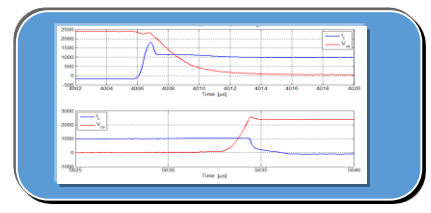
Press Pack IGBT technology provides the most robust performance for highest reliability through providing double sided closed loop water cooling and fail safe short circuit mode.

Advanced device control and switching algorithms result in <20ms response times, very low losses and minimal harmonic emissions.

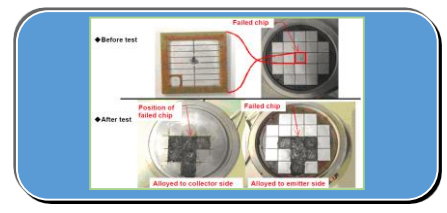


High voltage and high current

Double-sided cooling



High-speed switching



Excellent resilience to short circuits

Power Consultants Ltd

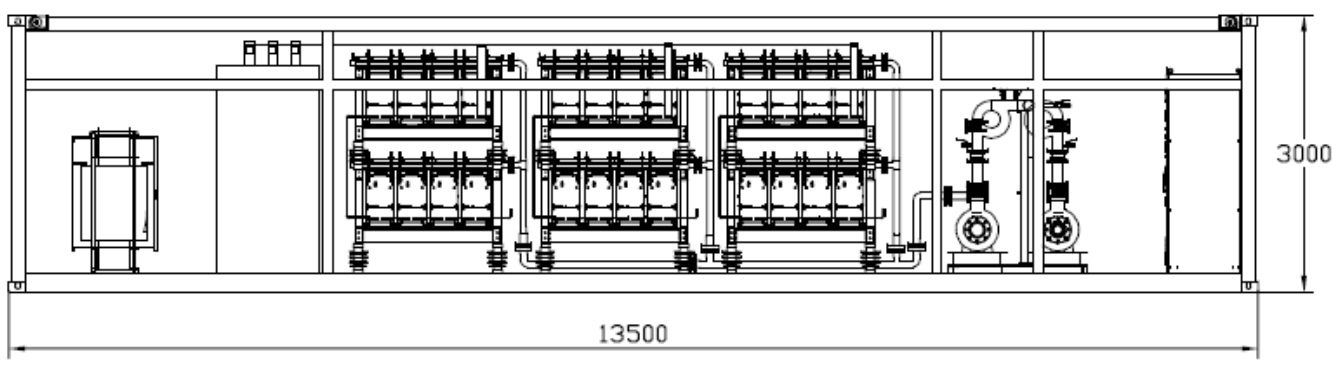
Committed to creating added value with innovative technology

RXHK

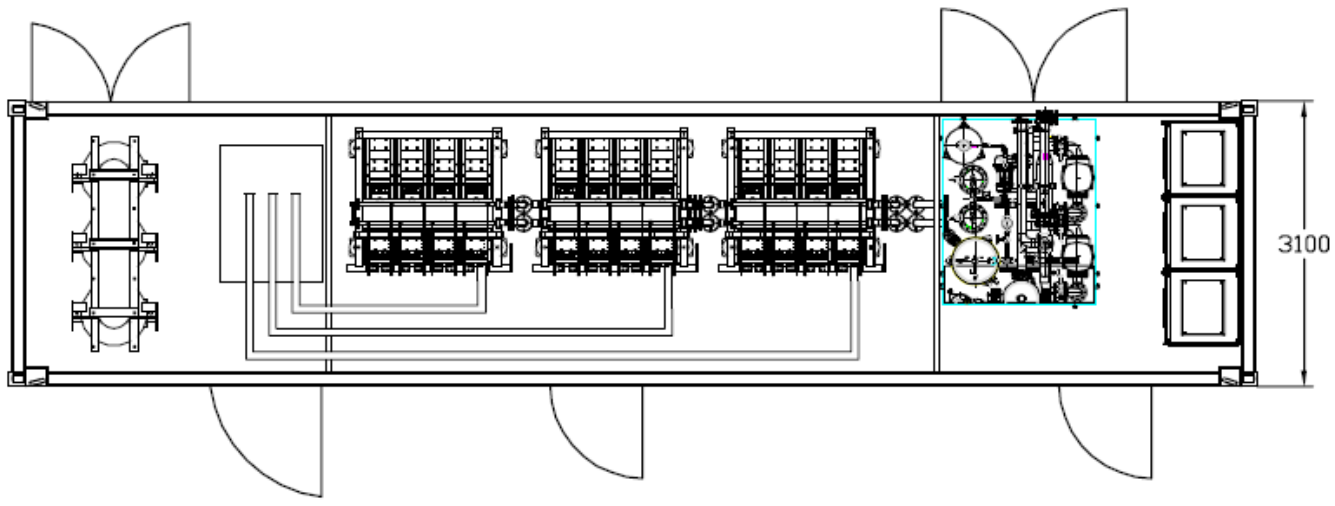
maXivar STANDARD

	Small	Medium	Custom
Mvar Range	±10 to ±15	±20 to ±30	Up to ±200
Topology	Δ - MMC	Y - MMC	Δ - MMC
Direct Connection (kV)	11	---	Possible
Transformer Connection (kV)	10/HV	20/HV	MV/HV
Mvar Range (N-1)	±10 to ±15	±20 to ±30	Designed Rating
Mvar Range (N-2)	---	up to ±15	Designed Rating
Overload capability	x2.5 (3s)/x1.5 (15s)	x2.5 (3s)/x1.5 (15s)	Custom
Control System	Single‡	Single‡	Dual
Additional Device Control†	Yes	Yes	Yes
Cooling System	Closed Loop Water	Closed Loop Water	Closed Loop Water
Temperature Range*	-25 to +50°C	-25 to +50°C	-25 to +50°C
No. of Containers	1	1	Up to 4
In-building Solution	Yes	Yes	Yes
Container Solution	Yes	Yes	Up to 150Mvar
Container Length (mm)	13,500	13,500	Custom
Container Width (mm)	3,100	3,500	Custom
Container Height (mm)	3,000	3,000	Custom

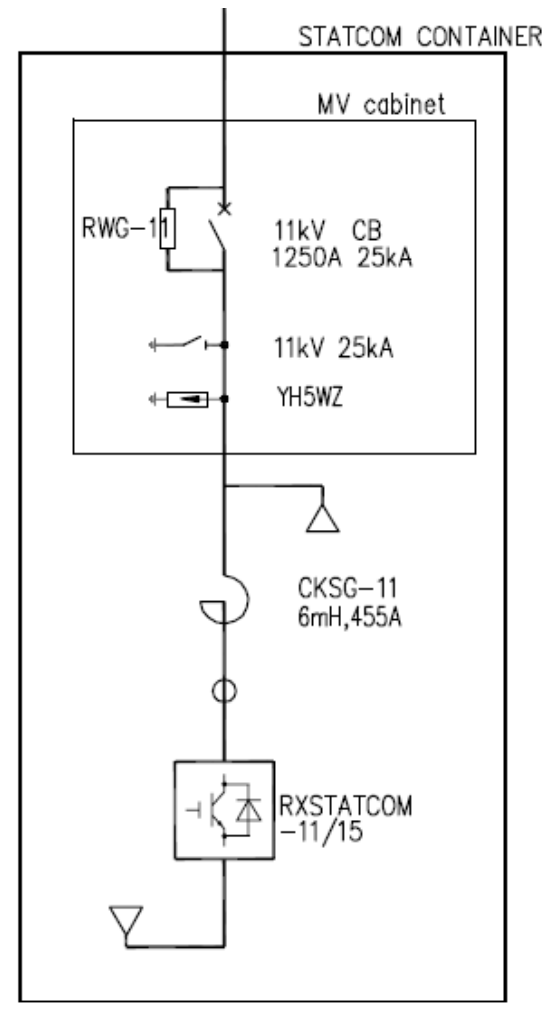
‡ Dual possible for special applications
† Such as MSC or MSR
* Solution can be designed to other temperature ranges



Front View



Top View



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