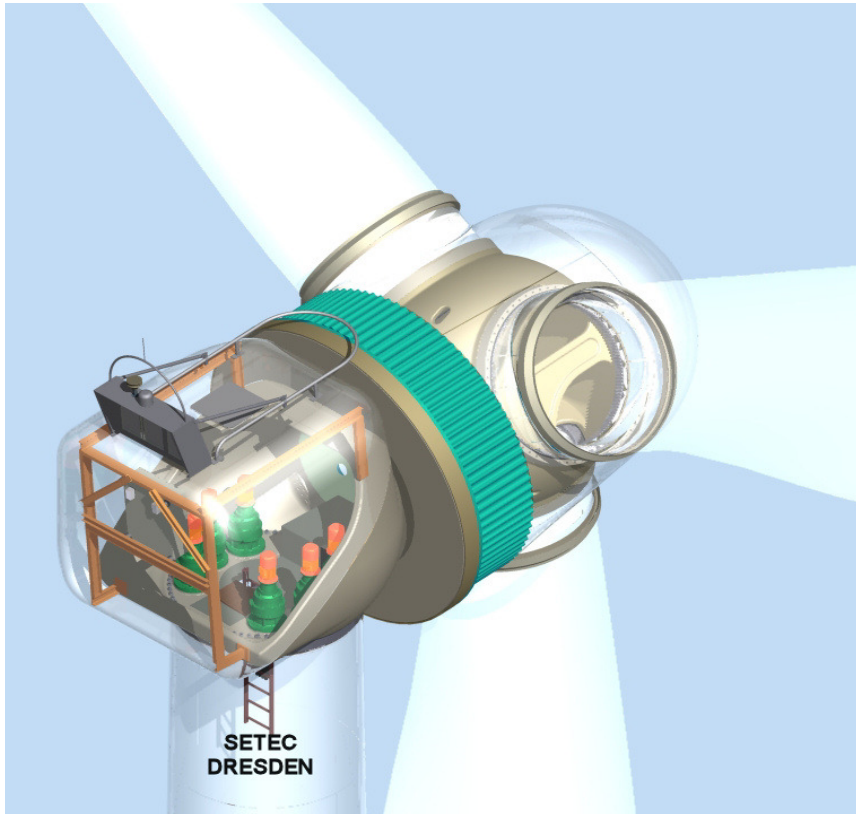
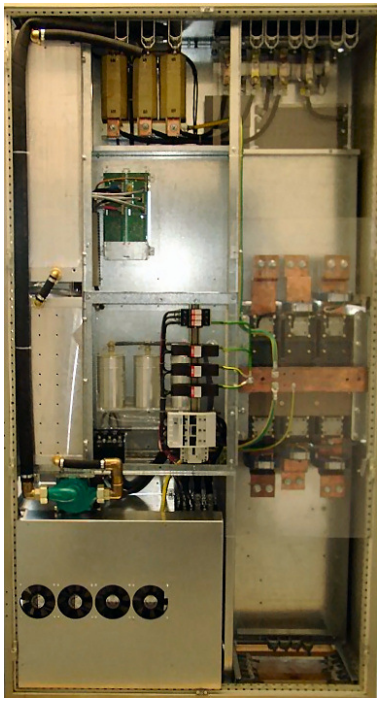
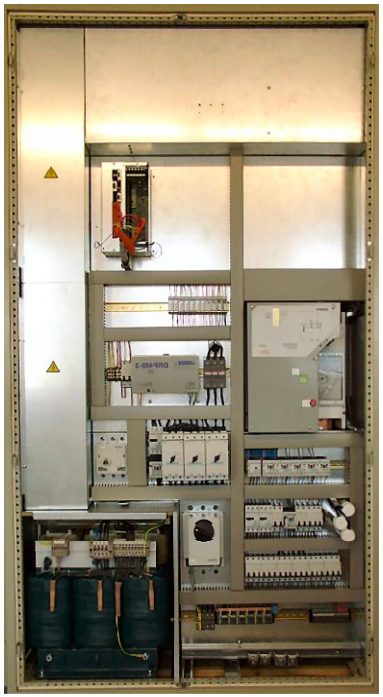
The Excellent
IGBT - Converter







WIND-POWER COMPETENCE
by EXPERIENCE since 1995

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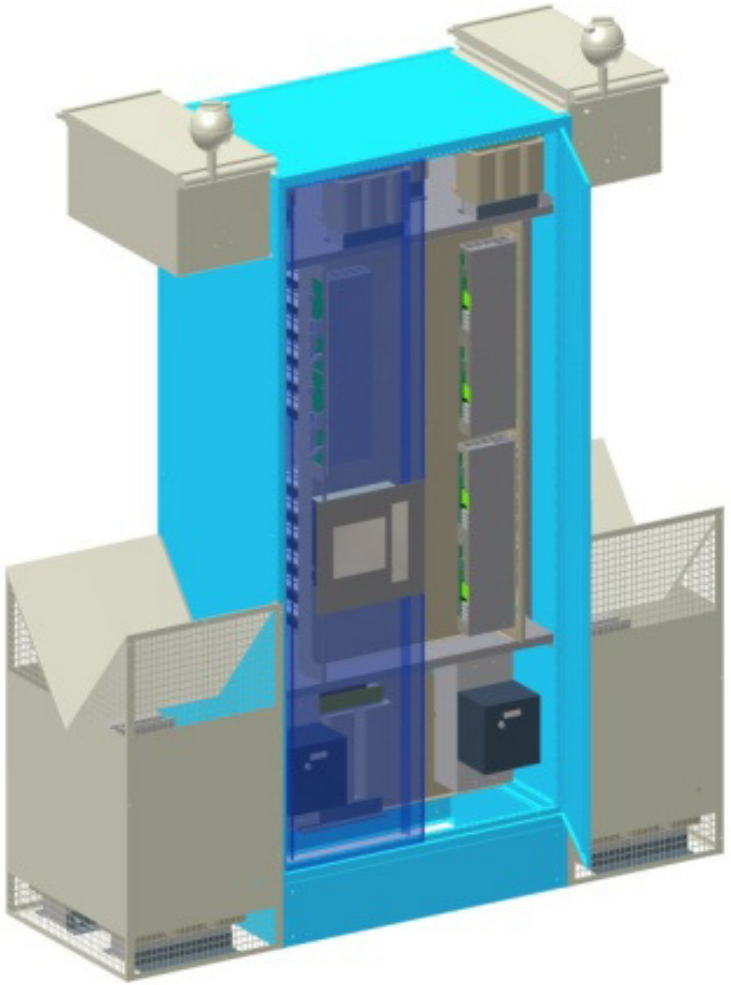
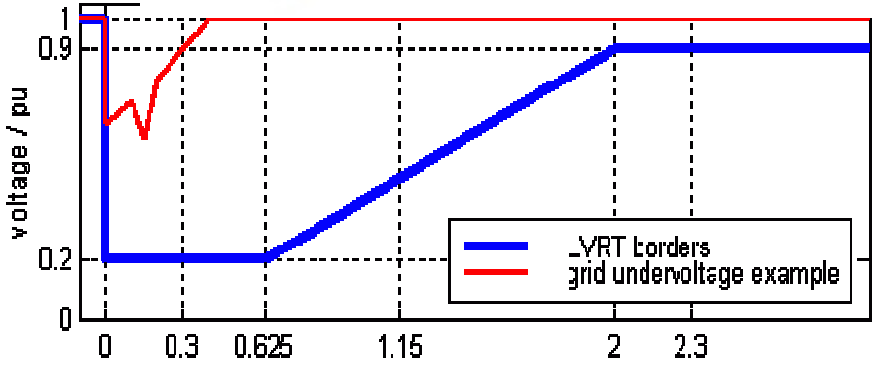
The IGBT- CONVERTER with LVRT

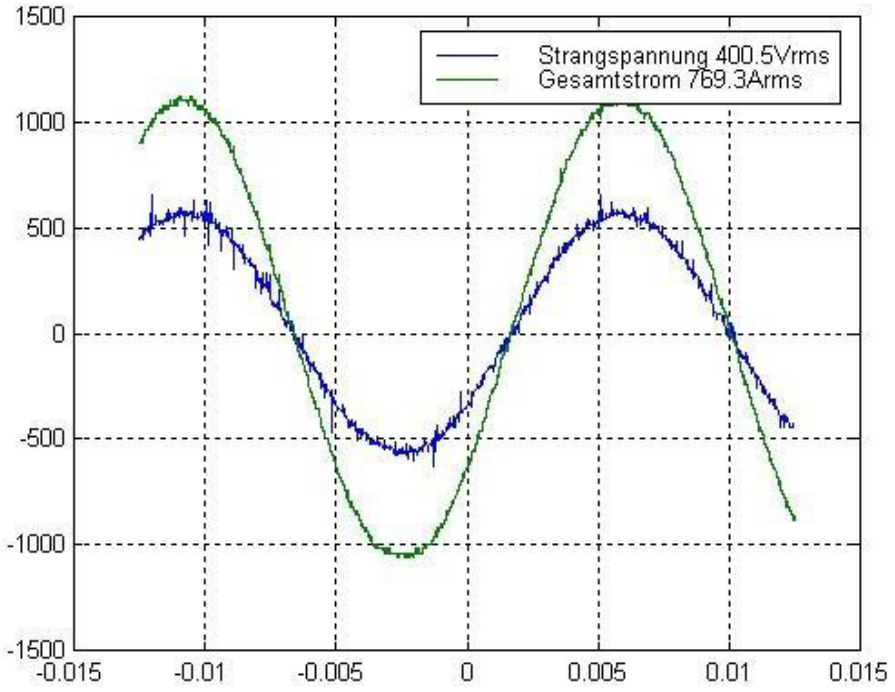
- The increased supply of wind energy into the electric power grid requires the use of appropriate systems of power control. Since 1997 our standard converters have been operating with gearless wind turbines.
- As the converter is fully controllable at the sides of the generator it causes an increase in power generation.
- The converter supports the detection and continued automatic operation during grid voltage dips (LVRT).
- The integrated grid connection and main energy distribution allows simplified commissioning and maintenance.
- Generator power with variable frequency is converted to a constant frequency (AC-DC-AC conversion) and fed into the grid.
- An important effect of this is the inclusion of network stability. According to standards for grid feed-in during distortion of voltage the converter will not shut-down.





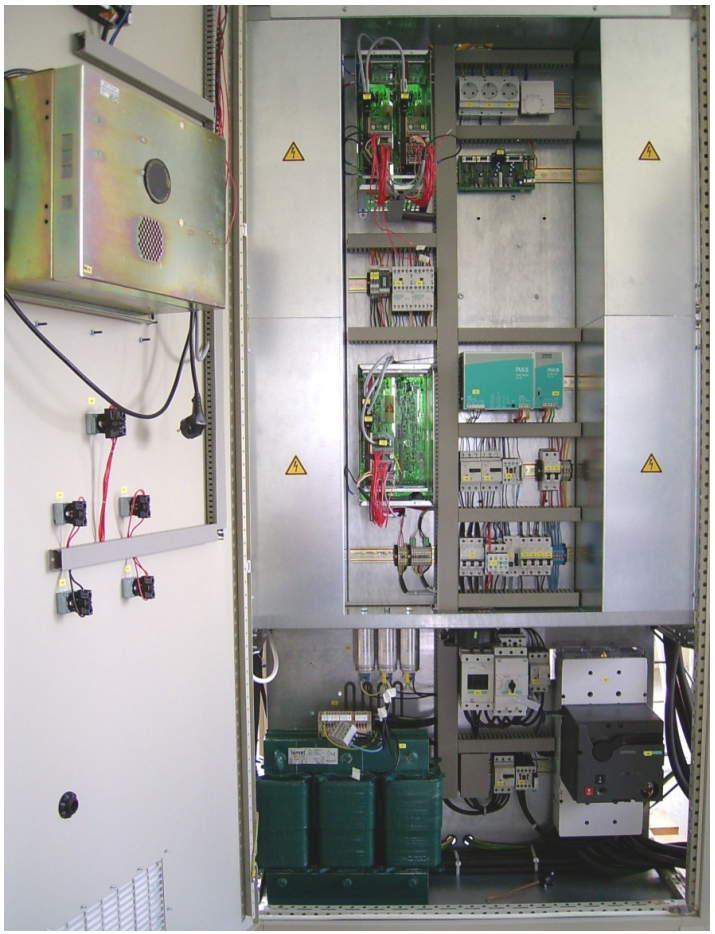
Design of the Converter Based on Experience Since 1995

The purpose of the IGBT Converter system is the variable speed operation of the wind turbine. Special features are low flicker, low harmonic distortion and controlled power to the mains.



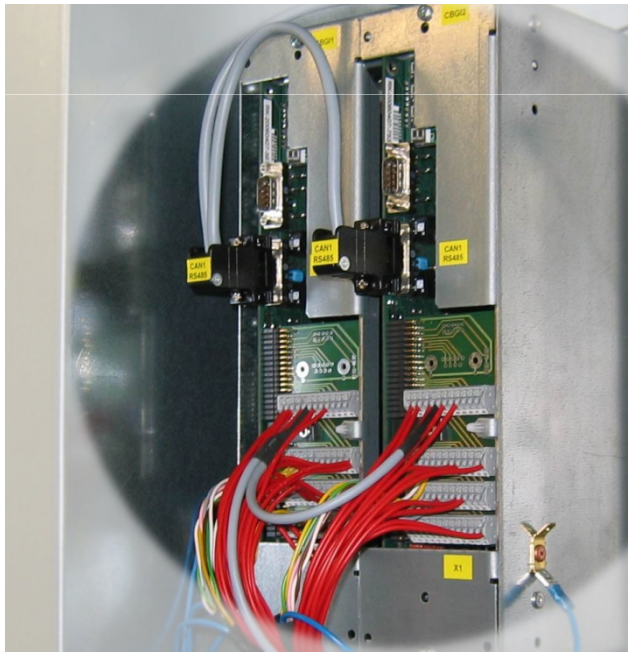
Components integrated at converter cabinet:

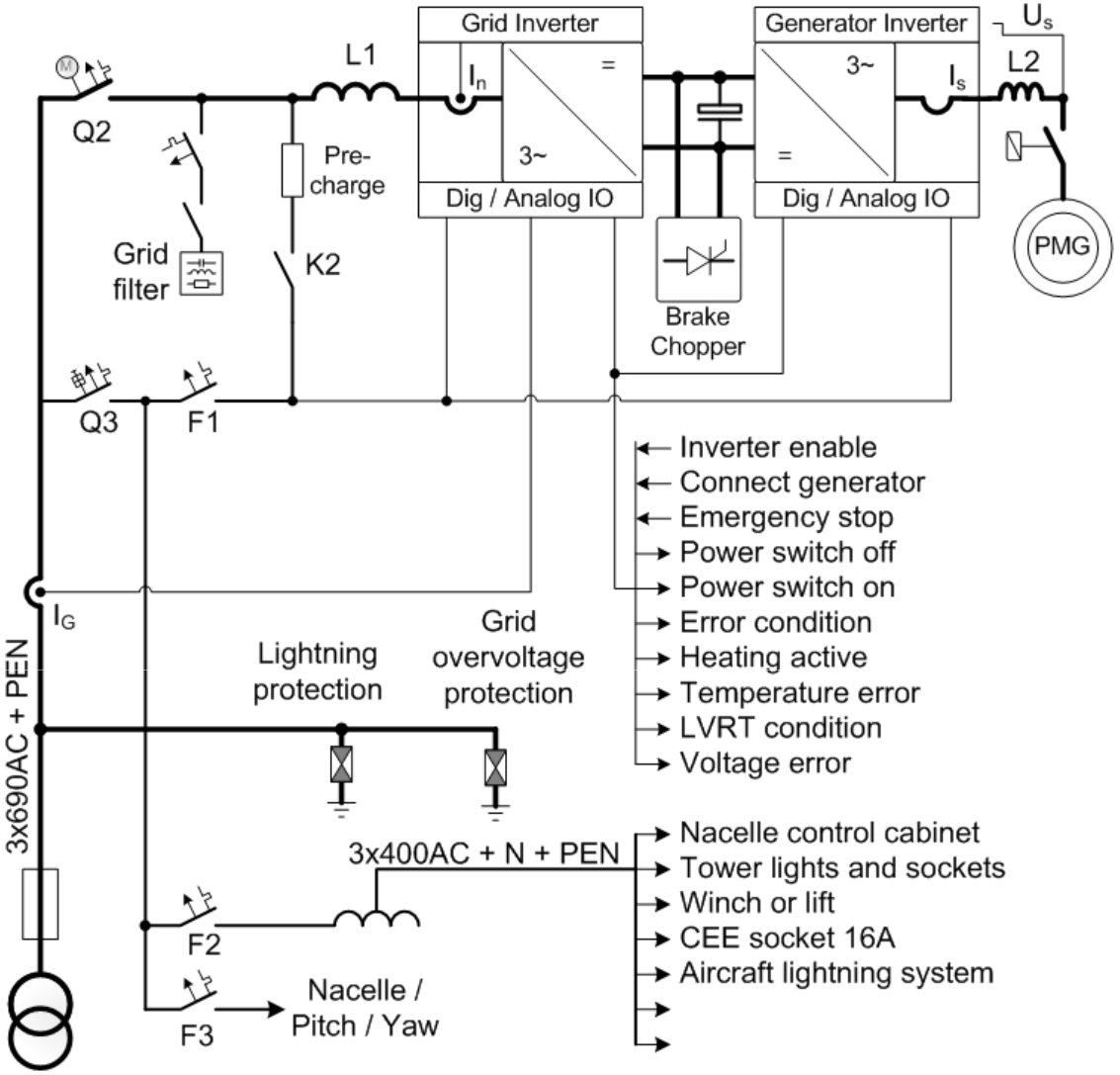
- IGBT inverter for the control of power-grid and generator
- Low voltage ride through capability
- Liquid cooling to dissipate IGBT losses
- Line filter to reduce current ripple
- Circuit breaker for power connection.



Power Generation by Full Size IGBT Converter with Main Distribution

- The control of generator-side and grid side inverter features control of active and reactive power.
- The converters can be used for generators with low, medium and high-speed design.





ENGINEERING and LICENSING
for MECHANICS, GENERATOR,
The likely best PITCH-SYSTEM, The IGBT-CONVERTER;
The CONTROL and SCADA SYSTEM