

ELECTRICAL & POWER



 **GENeUS**

 **SAFRAN**



**Advanced Generators**



## **GENeUS ADVANCED GENERATORS**

Our vision is to deliver to the market **smarter electrical solutions for a better flight**. This includes the new GENeUS generators and ENGINEUS motors.

For decades, we have been building generators installed on major aerospace programs.

Our know-how and industrial expertise combined with the Safran willingness to introduce breakthrough technologies and state of the art highly reliable products, has turned into a complete range of GENeUS generators.

## Advantages

- **Permanent magnet generator:**

- Unrevealed weight and efficiency compared to other machine topologies.

- **Integrated active rectifier solution → Smart High Voltage DC (HVDC) permanent magnet generator:**

- Power electronics rectifier integrated within the electrical machine.

- Active DC output voltage control for direct battery system connection.

- Lighter, cheaper, easier A/C integration compared to a split rectifier solution.

- **Liquid cooling is the baseline: with or without integrated pump, both options available:**

- Air cooling may be proposed as an option.

- Common cooling system for generator and rectifier unit.

- **Design for high speed operation:**

- Nominal speed: 40 Krpm, well adapted to heat engine shaft speed.

- **No need for additional gear box for direct connection to the heat engine shaft.**

- **High output voltage:**

- Nominal 540 VDC

- Up to 750 Vdc

- **Use of E mag advanced material and SIC MOSFET switches for PWM active boost rectifier.**

- **Optimized multi phases motor/rectifier design:**

- Losses spreading for efficient and lightest integrated liquid cooling system.

- Fault tolerant design available including short circuit condition.

- Scalable design made of power electronics buildings bricks (intelligent power module).

- **High reliability:**

- Reliable rectifier packaging.

- No electrolytic capacitor.

- Bar winding with re enforced insulation system for high voltage operation.

## Performance

- **Power density >8KW/Kg → generator + active rectifier, output DC controlled voltage.**

- **Efficiency >0,94 → generator + active rectifier.**

- **Customized power rating from 150 KW based on a large power range building brick family.**



GENeUS : Major  
breakthrough in  
aerospace High voltage  
DC generation solution

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**POWERED  
BY TRUST**

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