



Water-cooled Generators 28V DC Robust, Efficient Design For Demanding Conditions

Changing deployment scenarios, application of new technologies for auxiliary components and additional loads are pushing conventional generator technologies to their limits, when it comes to providing the necessary power output.

Jenoptik, a leading supplier for such new demanding technologies, provides a 28V DC water-cooled generator product line of 200, 240 or 300A built into the construction space of a conventional air-cooled generator. The current range can even be enhanced to higher current output. The unipolar generators are belt- or shaft-driven, brushless and water-cooled with an integrated controller, in compliance with MIL STD 461E and MIL STD 1275B. They can be operated over a wide range of rotational speeds with high efficiency while contained in a solid mechanical construction.

This advanced technology is already installed in military vehicles all over the world: e. g. M113, Duro/Yak, Eagle etc.



The Water-cooled Generator Family

The water-cooled generator family contains a main excitation winding, an integrated voltage control unit, a rectifier and an output smoothing filter. The output voltage from the rotary current winding is rectified using a high performance rectifier while providing a floating ground DC voltage.

An integrated voltage controller governs the generator and monitors its functioning. A control amplifier with power transistors matches the excitation current to the given load situation to provide a stabilized 28V DC output voltage. The generator is equipped with excellent integrated load dump functionality.

The water-cooled generators are designed for parallel running with a second generator. For this purpose the generator is equipped with a current limiter control unit, so that if a threshold current is exceeded, the second generator automatically takes over the additional load.

Special Features:

- Water-cooled unipolar generator with integrated controller
- High efficiency ratio
- Brushless, robust and maintenance-free design
- Insusceptible to sand, dust and jets of water
- Constant power output due to temperature independence
- Parallel running mode
- Direct- or belt-driven



Technical Data

Nominal Output	5,6 – 8,4 kW
Nominal Voltage	28V DC ± 0,5V DC
Nominal Current	200 - 300 A at 4,500 rpm current limited (up to 96°C coolant temperature)
Nominal Speed (max.)	10,000 rpm
Overspeed (max.)	11,000 rpm (for up to 5 min)
Coolant	Liquid cooling (50:50 water-glycol mixture from drive motor)
Coolant Temperature Range	-46°C to +96°C
Flow Rate	≥ 8 l/min
Ambient Temperature Range	-46°C to +110°C
Weight	Approx. 37 kg (version 240A, dry)
Dimensions	Length approx. 360 mm, diameter 203 mm (8")
Fixings	Different mounting arrangements available
Pressure Differential	Approx. 350 hPa (0.35 bar)
Input Pressure	Approx. 1,500 hPa (1.5 bar)
On-board Supply Specifications	In compliance with MIL STD 1275B
Electromagnetic Compatibility	In compliance with MIL STD 461E, CE102, CS114
Protection Class	IP67 and IP69K
Insulation Class	C according to DIN VDE 0580



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