

FANS FOR WIND TURBINES



The Rosenberg Group

Air conditioning and ventilation technology
is our world



Air is our element – **moving it intelligently and efficiently** is our passion.
Since 1981 we have been developing and producing adjustable external rotor motors, fans and air handling units.

Established

1981

Employees

350 in Germany
Approx. 1,400 worldwide

Production sites

Germany, Hungary, Czech Republic,
Italy, France, China, Slovakia

**Development centres
(certified laboratory)**

Germany, France,
Hungary and China

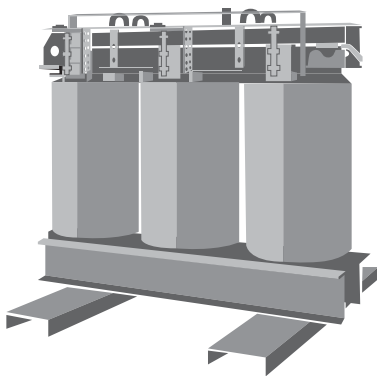
**Subsidiaries
and Partners**

ROX Klimatechnik GmbH,
ECOFIT, ETRI, Airtècnics



Cooling the generator

The generator is the heart of the wind turbine. During the process of converting kinetic energy to electrical energy, heat is generated. Rosenberg Fans, as part of cooling systems, ensure the needed cooling load, safe life time and efficiency of the generator. Fan type DRA... and AKS... are ideally suited to this task.

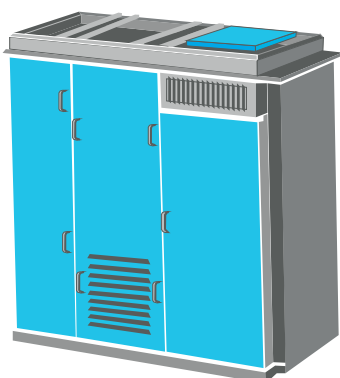


Transformers

Heat generated in the winding of dry transformers must be dissipated over the surface of the coil. Rosenberg fans help to extract the dissipated heat and simultaneously use the ambient air to cool down the transformer.

The following advantages result from efficient cooling:

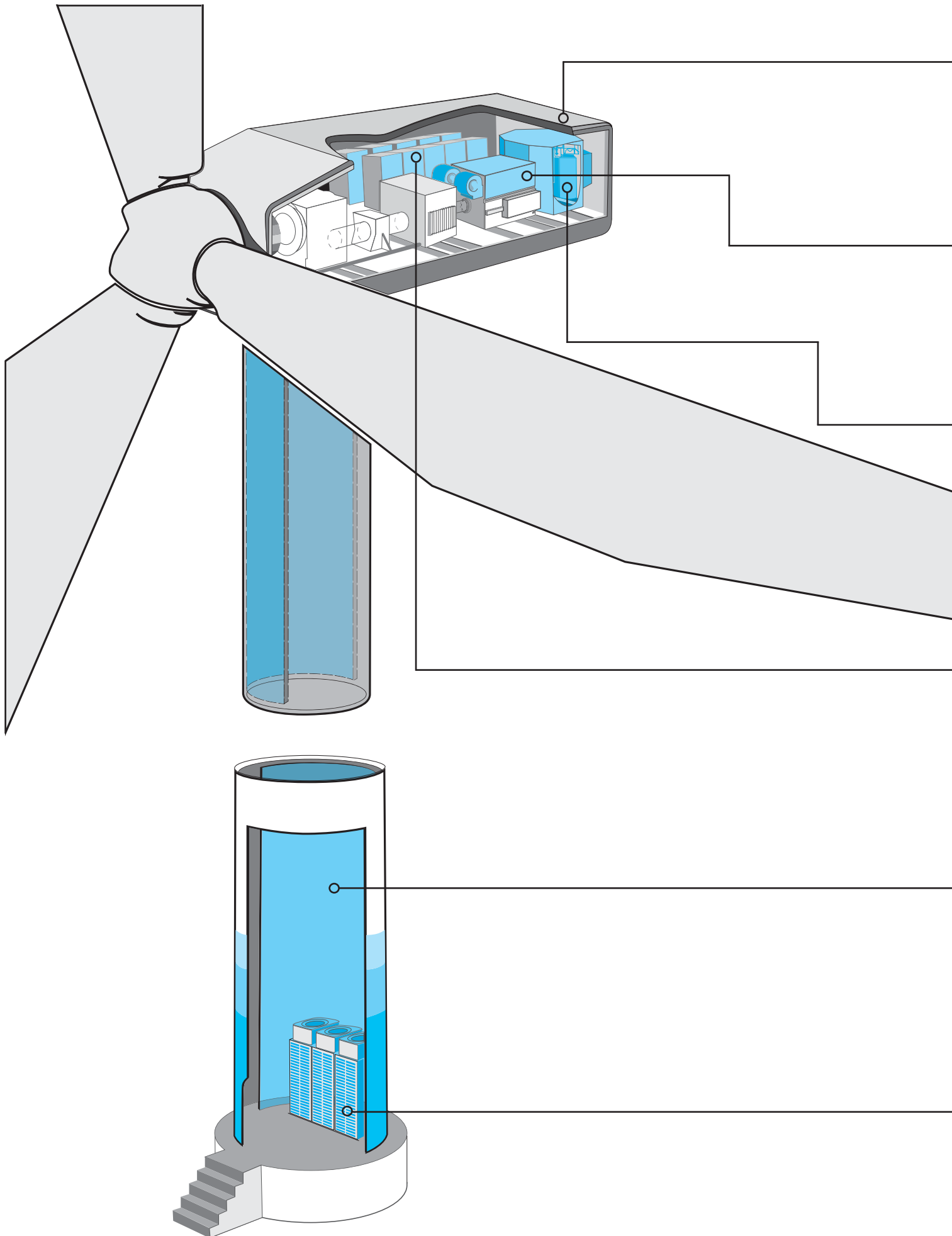
- Higher peak loads can be achieved
- Improved efficiency
- Increase the power of the transformer
- Longer life due to the constant distribution of temperature



Inverter cooling

To ensure that the generated current can be injected into the grid at a constant voltage and frequency, inverters are needed. For cooling the sensitive electronic components individually designed Rosenberg fans are used.

FANS



Nacelle cooling



DQ



DHA

Generator cooling



DRA



AKF



Transformer cooling



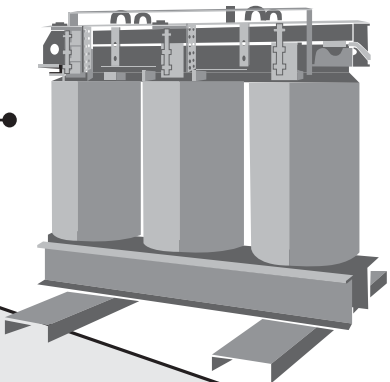
DKNM



DKHM



DKNR



Ventilation of the switching cabinets



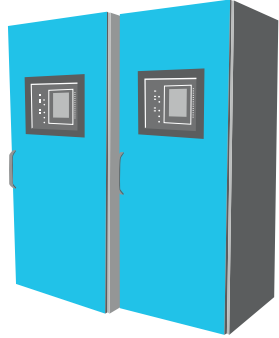
GKHM



DKHM



ERA



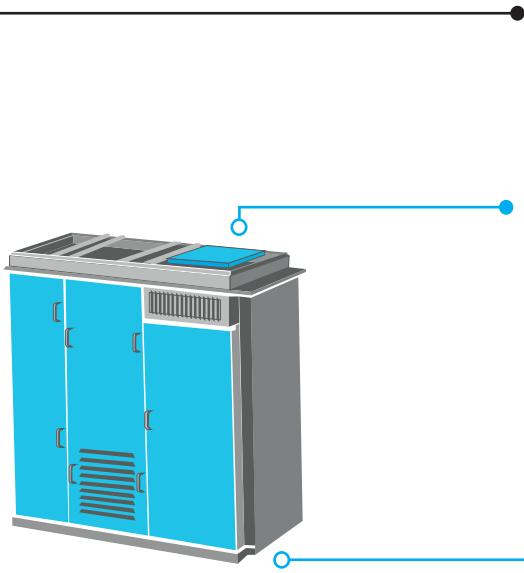
Tower cooling



AND



DKNB



Inverter cooling



DV



ERA



GKHM



DKHM

Axial fans type: AND/ANDB/DR/DQ

- AND/ANDB Axial fans with standard driven motor and adjustable blades made of diecast aluminium.
 (Air volumes up to 80.000 m³/h, pressures up to 1.000 Pa)
- DQ/DR/AKF compact, noise optimized axial fans with external rotor motor and air volumes up to 30.000 m³/h

Application field:

Ideal suited for moving high air volumes for example in tower or nacelle cooling

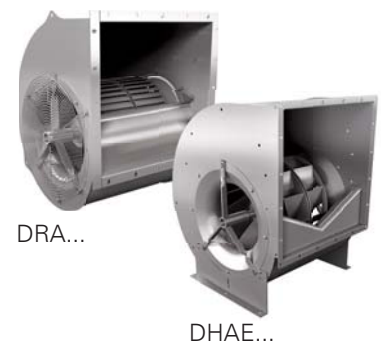


Centrifugal fans type: DRA / DHA

- Double inlet centrifugal fan with forward curved impeller blades
 (Type: DRA)
- Double inlet centrifugal fan with backward curved impeller blades
 (Type: DHA)
- Variable mounting positions possible
- Air volume up to: 28.000 m³/h
- Total pressure: 1.100 Pa

Application field:

Generator cooling, nacelle cooling



Centrifugal fans with Free running impeller type: DKNB / DKNM / DKNR

- Free running impeller with IEC standard motor (DKNB)
- Impeller with backward curved blades
- Motor with impeller (DKNR) or ready-to-install module
- Ideal for confined spaces due to its space saving construction
- Air volume up to: 35.000 m³/h
- Total pressure: 2.800 Pa

Application field:

Ventilation of the switching cabinets, tower cooling





GKHM

DKHM

**Centrifugal fans with free running impeller type:
DKHM / GKHM**

- With AC-external rotor motor, alternatively with EC-motor
- Backward curved impeller
- Motor with impeller (GKHR / DKHR) or ready-to-install module (GKHM / DKHM)
- Ideal for confined spaces due to its space saving construction
- Air volume up to: 15.000 m³/h und total pressure: 1.400 Pa

Application field:

Ventilation of the switching cabinets, tower cooling



ERA...

Centrifugal fans type: ERA

- Single inlet centrifugal fan with forward curved impeller
- Variable mounting positions possible
- Air volume up to: 8.000 m³/h
- Total pressure: 1.000 Pa

Application field:

Ventilation of the switching cabinets, transformer and inverter cooling



DV

Roof fans type: DV

- Vertical version
- Impeller with backward curved blades
- Air volume up to: 18.000 m³/h
- Total pressure: 1.200 Pa

Application field:

Transformer and inverter cooling

Railroad technology

Rosenberg is one of the world's leading brands in railway technology. Rosenberg OEM Products are not only installed to air-condition driver's cabins and passenger compartments but also to cool switchboards, drive inverters and many other components.



Compressor cooling

Knowledge and experience - Rosenberg has been active in the compressor cooling sector for many years. Due to the close cooperation with well-known manufacturers, numerous fans have already been adapted to the needs of the industry.



Transformer cooling

Efficient cooling plays an important role in the lifetime and constantly high operation safety of transformers. Customized fans assume this task for many years and are characterized by reliability and high quality.





Data Centers

Protecting data centers from overheating and humidity is one of the main tasks of fans within this application. Rosenberg OEM products with AC or EC drive guarantee a smooth and failsafe operation of the computer systems in an efficient manner.



Marine

Cruise Ships have a wide range of ventilation needs. Rosenberg OEM Products offer solutions for exhaust ventilation of elevators, restrooms, laundries or battery compartments as well as solutions for the use in HVAC applications dedicated to yachts and cruise ships cabins.



Packaging Industry

In highly complex packaging processes, it is essential to prevent a failure of the entire system. Therefore Rosenberg OEM products are used for cooling to ensure a trouble-free operation of various machines in industrial packaging processes.

Since its foundation in 1981 by Karl Rosenberg the Rosenberg Ventilatoren GmbH has emerged through its development and production of adjustable external rotor motors, fans, air handling units and control technology as an important center for Europe for the ventilation and air conditioning industry in Europe.

Customer-oriented and high-quality production is our top priority. The continuous information flow and a good cooperation between customers and our employees is very important to us to ensure quality and product innovation. Modern perfor-

mance testing, computer-controlled production machines and self-directed work groups are also included as well as the integration of measures for higher quality and environment protection.

At the headquarters in Künzelsau, Rosenberg employ 240 members of staff, with over 1.400 employees worldwide. Further Rosenberg production plants are located in Glaubitz (Germany), Waldmünchen (Germany), Hungary, Czech Republic, Italy, France, Slovakia, Turkey, Mexico and in China.

FANS



You can find more information on:

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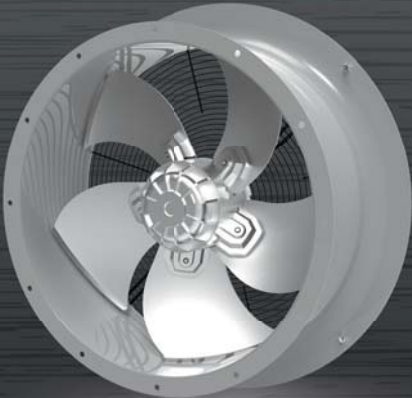
Product information:

AXIAL FANS

for transformer cooling

Fans with AC-motors
Type: **AKFD**

- Ø 450-800 mm
- With robust asynchronous external rotor motor
- Compact, space saving design
- Double flange casing made of galvanized sheet steel with special powder-coating according to DIN EN ISO12944 (Optionally up to C5M)
- Aluminium terminal box (optionally coated)
- Fan guard with high quality surface treatment (Cathodic dip painting + powder coating)
- Pressure-side flange with mounting holes for easy installation
- Exhaust side fan guard available as an option



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