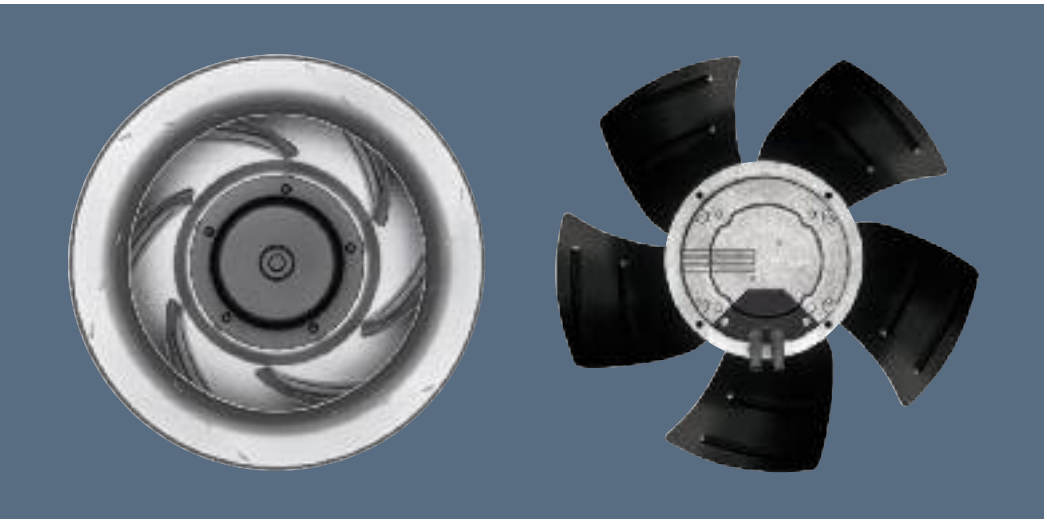
Fans for rail technology

Product overview



The engineer's choice

ebmpapst

Sustainability is at the Centre of Our Thoughts and Actions. Out of Conviction!

Eco-friendliness and sustainability have always been at the core of our thoughts and actions. For decades, we have worked according to the simple but strict creed of our co-founder Gerhard Sturm: "Each new product we develop has to be better than the last one in terms of economy and ecology." GreenTech is the ultimate expression of our corporate philosophy.

GreenTech is pro-active development.
Even in the design phase, the materials and processes we use are optimised for the greatest possible eco-friendliness, energy balance and – wherever possible – recyclability. We continually improve the material and performance of our products, as well as the flow and noise characteristics. At the same time, we significantly reduce energy consumption. Close cooperation with universities and scientific institutes and the professorship we endow in the area of power engineering and regenerative energies allows us to profit from the latest research findings in these fields – and at the same time ensure highly qualified young academics.

GreenTech is ecofriendly production.
GreenTech also stands for maximum energy efficiency in our production processes. There, the intelligent use of industrial waste heat and groundwater cooling, photovoltaics and, of course, our own cooling and ventilation technology are of the utmost importance. Our most modern plant, for instance, consumes 91% less energy than currently specified and required. In this way, our products contribute to protecting the environment, from their origin to their recyclable packaging.

GreenTech is acknowledged and certified.
Every step in our chain of production meets the stringent standards of environmental specialists and the public. The 2008 Environmental Prize of Baden-Wuerttemberg, the Green Award 2009, the Energy Efficiency Award 2009 of the dena – to give just a few examples – testify to this. The environmental advantage gained in the performance of the products developed from our GreenTech philosophy can also be measured in the fulfilment of the most stringent energy and environmental standards. In many instances, our products are already well below the thresholds energy legislation will impose a few years from now – several times over.

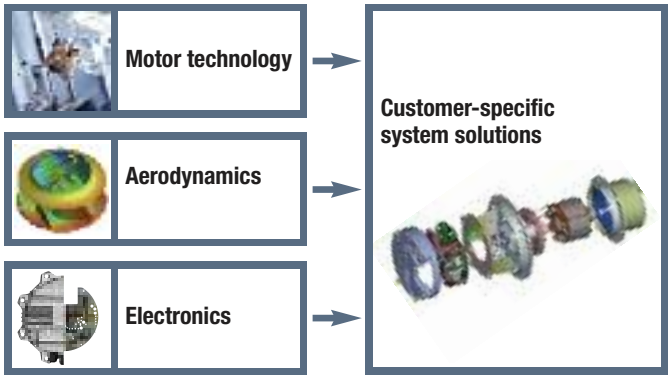
Our customers profit from this every day.
The heart of GreenTech is ebm-papst EC technology. The EC technology at the core of our most efficient motors and fans allows efficiency of up to 90%, saves energy at a very high level, significantly extends service life and makes our products maintenance-free. These values pay off not only for the environment, but every cent also pays off for the user! All ebm-papst products – even those for which EC technology does not (yet) make sense from an application viewpoint – feature the greatest possible connection of economy and ecology.

ebm-papst:
Your highly competent partner in rail engineering

Significantly increased commodity flows and growing mobility due to advancing globalisation require new solutions, particularly in rail traffic. Powerful and reliable vehicle concepts provide the basis for means of transport that are more efficient and, above all, more environmentally friendly.
An essential part of this effort is cooling both diesel-powered and electrically powered rail cars as well as providing maximum comfort for passenger transportation. Precisely in this area, ebm-papst has time and again set new standards with brushless fans.

Motor technology, electronics, aerodynamics: Our advantage lies in the perfect interaction.

Leading technologies, groundbreaking application solutions, innovative products – all of these would not be possible if we did not see the big picture: aerodynamic interrelationships and therefore the perfect interplay of motor technology, electronics and aerodynamics.
Our three core competencies are in direct relationship to each other in our products. The objective is always to use air and motion as efficiently as possible, whether in the tightest spaces, in large dimensions or under extreme ambient conditions. After all, it is only in this way that our customers can obtain high-quality end products that are all of a piece;
whether they are high-performance driver's cab climate control systems and heating units, versatile passenger compartment systems or effective cooling of power electronics in locomotives.
In order to achieve an aerodynamically optimum shape for our fans, we design fan blades, impellers and ducted housings to match the relevant application environment. From seemingly small details, such as the blade-tip slip with winglets, result significant optimisations for noise reduction with even higher efficiencies. And when they are combined with intelligent electronics, the drive engineering and aerodynamics then operate as a system solution optimally matched to each other. The perfect interplay thus arises: our lead in global competition.



To provide you with the best solution for your rail application, we observe the following standards in developing our products:

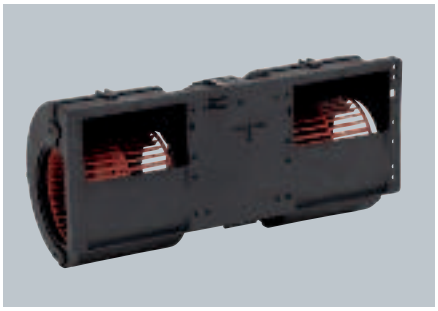
- **IEC 61373: Shock and vibration test**
- **DIN 5510 (prEN 45545): Fire protection on railway vehicles**
- **EN 15085: Welding of railway vehicles and components**
- **EN 50155: Electronic equipment used on rolling stock**
- **EN 50121: Electromagnetic compatibility**

Centrifugal fans for rail applications

The outstanding feature of ebm-papst centrifugal fans is their compact, flat design, which results from integrating the external rotor motor into the impeller. The centrifugal fans are used in air-conditioning, heating and cooling.

BLDC dual centrifugal blowers

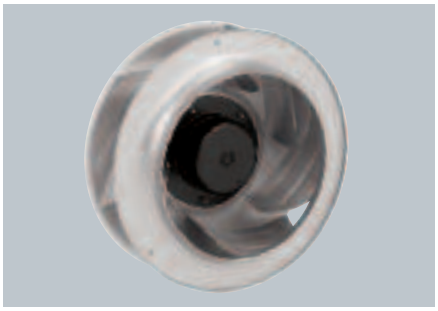
ebm-papst dual centrifugal blowers are evaluated according to DIN 5510 and are equipped with over-temperature protection, reverse polarity and locked rotor protection, load dump protection and line undervoltage detection.
The scroll housing consists of heat-resistant Grilon and the impeller is made of polyacrylamide.
In addition, only maintenance-free ball bearings are used for a long service life.



Technical values	
Voltage range:	24 to 48 VDC
Air flow:	up to 1,600 m³/h
Counterpressure:	up to 1,300 Pa
Power input:	up to 700 W

Centrifugal fans, DC-powered with backward-curved impeller

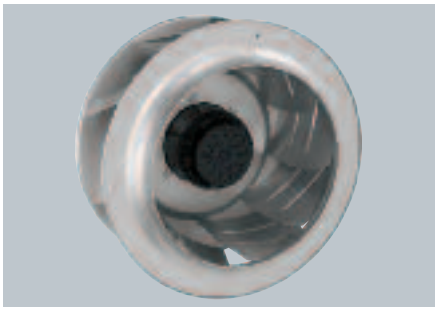
The backward curved impeller of the centrifugal fans consists of aluminium sheet. Maintenance-free ball bearings ensure a long service life.
All connection lines comply with DIN 5510.



Technical values	
Voltage range:	80 to 110 VDC
Air flow:	up to 3,500 m³/h
Counterpressure:	up to 800 Pa
Power input:	up to 900 W

AC centrifugal fans for 1-phase and 3-phase power systems with backward curved impeller

The backward curved impeller of the centrifugal fans consists of aluminium sheet. Maintenance-free ball bearings ensure a long service life. The vacuum-varnish impregnated windings are protected optimally from external influences. All connection lines comply with DIN 5510.



Technical values	
Voltage range:	230 VAC, 1-phase
Frequency:	50/60 Hz
Air flow:	up to 6,000 m³/h
Counterpressure:	up to 500 Pa
Power input:	up to 1,000 W

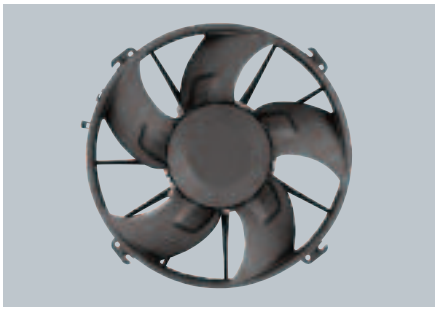
Technical values	
Voltage range:	230/400 VAC, 3-phase
Frequency:	50/60 Hz
Air flow:	up to 15,000 m³/h
Counterpressure:	up to 900 Pa
Power input:	up to 3,000 W

Axial fans for rail applications

The outstanding features of ebm-papst axial fans are their low installation depth, low noise level and outstanding efficiency. The axial fans are used in air-conditioning, heating and cooling.

BLDC axial fans

ebm-papst axial fans are evaluated according to DIN 5510 and are equipped with over-temperature protection, reverse polarity and locked rotor protection, load dump protection and line under-voltage detection.
The wall ring consists of heat-resistant Grilon and the impeller is made of Ultramid.
In addition, only maintenance-free ball bearings are used for a long service life.



Technical values	
Voltage range:	24 to 48 VDC
Air flow:	up to 2,700 m³/h
Counterpressure:	up to 340 Pa
Power input:	up to 340 W

Axial fans, DC-powered

The blades of the ebm-papst axial fans consist of sheet steel coated in a high-quality process. Wall rings are made of galvanised sheet steel with plastic coating, and the guard grilles are made of galvanised and dip-coated steel. Maintenance-free ball bearings ensure a long service life.
All connection lines comply with DIN 5510.

Technical values	
Voltage range:	80 to 110 VDC
Air flow:	up to 6,000 m³/h
Counterpressure:	up to 160 Pa
Power input:	up to 400 W

AC axial fans for 1-phase and 3-phase power systems

The blades of the ebm-papst axial fans consist of die-cast aluminium. Wall rings are made of galvanised sheet steel with plastic coating, and the guard grilles are made of galvanised and dip-coated steel. Maintenance-free ball bearings ensure a long service life. The vacuum-varnish impregnated windings are protected optimally from external influences.
All connection lines comply with DIN 5510.

Technical values	
Voltage range:	230 VAC, 1-phase
Frequency:	50/60 Hz
Air flow:	up to 12,000 m³/h
Counterpressure:	up to 100 Pa
Power input:	up to 1,000 W

Technical values	
Voltage range:	230/400 VAC, 3-phase
Frequency:	50/60 Hz
Air flow:	up to 30,000 m³/h
Counterpressure:	up to 180 Pa
Power input:	up to 2,500 W

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