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Building technology from ebm-papst

Homes, office buildings and factories are designed for the future. Thus it is all the more important that in the area of building systems, this future is incorporated from the start. For example, in the form of the energy-saving motors and fans from ebm-papst, which render quiet, reliable service. Thanks to groundbreaking GreenTech EC technology, designers and building owners can thus be sure that even today, future technical standards and legal requirements are not only complied with, but exceeded.

ebm-papst
Mulfingen GmbH & Co. KG

Bachmühle 2
D-74673 Mulfingen
Phone +49 7938 81-0
Fax +49 7938 81-110
info1@de.ebmpapst.com

ebm-papst
St. Georgen GmbH & Co. KG

Hermann-Papst-Straße 1
D-78112 St. Georgen
Phone +49 7724 81-0
Fax +49 7724 81-1309
info2@de.ebmpapst.com

ebm-papst
Landshut GmbH

Hofmark-Aich-Straße 25
D-84030 Landshut
Phone +49 871 707-0
Fax +49 871 707-465
info3@de.ebmpapst.com

www.ebmpapst.com

Efficiency and comfort
from the basement to the roof

ebmpapst

The engineer's choice

ebmpapst

Symbols that define standards

Green through and through.
In order to underline our philosophy, efforts and achievements when it comes to environmental protection, we have put them all in a nutshell with GreenTech. The benefits of GreenTech mesh with one another from the initial development of our products through to their use – and they form a circuit that finishes right where it began: with the philosophy that we shall soon build another, even more eco-friendly and economical product.

Philosophy:
Each newly developed product must exceed the economic and ecological performance of its predecessor.

Development:
Materials, products and processes are selected and designed in an environmentally responsible manner using state-of-the-art methods.

Production:
State-of-the-art energy, air-conditioning and ventilation technology provides maximum energy efficiency in our plant.

Awards:
Environmental prizes, distinctions and energy values that fall below even the most stringent limits speak for themselves.

Application:
Our ultra-efficient products employ GreenTech EC technology and impress with enormous energy savings and top-class performance.

ErP2015 EXCEEDS THE NORM

For products with an input capacity between 125 W and 500 kW, the new European Energy-related Products Directive (ErP) to improve energy efficiency, will enter into force in 2015 at the latest. Thanks to groundbreaking GreenTech EC technology, all ebm-papst fans and motors in these performance classes exceed the ErP Directive even today.

Building for the future with quality

Those who build a house or a building do so primarily with the future in mind. Therefore, it is good to also ensure future-proof quality in the details. The motors and fans in GreenTech EC technology from ebm-papst – world-wide No.1 in air technology and drive engineering – are not only extremely reliable, but also already exceed the ErP Directives that are to take effect in 2015. This is good for the environment and, in the long run, the building owner.

Build on our over 40 years of experience.
Some people are not even aware how many high-quality products from ebm-papst can be in a single building. But that is really no surprise. Precisely that is a point of pride for us: Our motors and fans do their work so reliably and quietly, and for such a long time, that it is almost impossible to notice them. For several decades, our engineers and technicians have been devoting their entire efforts to making this happen – whether it is by developing ever more efficient fans for refrigeration and air-conditioning technology, innovative solutions for the most varied heating systems or other applications in which air is to be moved in a way that is as intelligent, quiet and efficient as possible. Many of these product developments have set standards. Indeed, many of our innovations have become new standards. The next few pages will give you an overview of the possible applications of our motors and fans in building systems.

Quiet, energy-saving, intelligent:
GreenTech EC technology from ebm-papst.
Energy-saving motor technology pays off the most in applications in which it has long operating times. Therefore, our high-efficiency GreenTech EC technology is perfectly suited for use in buildings. Many fans in industry and commercial applications even run 24/7/365. The savings potential that exists here is still underestimated to this day. The bottom line: If European industries alone would switch to EC fans for ventilation, refrigeration and air-conditioning, approx. 30 % energy costs could be saved and thus four coal-fired power plants could be taken off-line. Annual CO_2 emissions would be reduced by approximately 16 million tonnes!

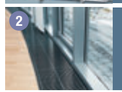
However, GreenTech EC technology offers even more: The high efficiency levels reduce noise emissions to a minimum, which improves the atmosphere significantly for living or working. The built-in electronics and sensors enable fully automatic control of all components. This also makes it easy to network them with other electronic devices, such as computers or cell phones, for monitoring and other purposes. To sum up: With GreenTech EC technology from ebm-papst, the future is already built in.

ebm-papst technology for industrial and commercial applications: Quality that works for you

The applications of our motors and fans are many and varied, from air-conditioning and refrigeration systems to building systems in general. However, they have one thing in common: World-wide, they set standards time and again, particularly in increasing the service life of installations, reducing energy consumption, developing low-noise fans and making consistent use of integrated electronics. The result: a workplace climate in industrial buildings and offices that is always pleasant. For this reason, energy-saving fans from ebm-papst have a long history of successful use in HVAC systems, façade ventilation, roof fans and cold/hot air curtains. Intelligent control for single rooms is possible, as is bus connection of all systems, for example in multi-storey buildings.

Building systems are not the only area in which products from ebm-papst render efficient and reliable service. Making barely a sound, they also work in many other places we encounter in our everyday working life, such as conveyor belts, computers, and beverage dispensers at which employees can serve themselves.

Central air-conditioning: Centrifugal fans in GreenTech EC technology, such as the ebm-papst plug fans, ensure high-efficiency operation in centralised air handling units. The controllability of the fans enables demand-oriented adaptation of the air volume.



Decentralised air-conditioning: For the air-conditioning units integrated into building façades, which are beneficial for use in decentralised air-conditioning solutions, centrifugal fans in GreenTech EC technology take full advantage of their compact design. They work quietly and reliably. For use in floor convectors, on the other hand, intelligent tangential blowers are used.

Roof fans: In central exhaust systems with roof fans, centrifugal fans in various sizes are used for air exhaust from bathrooms. Thanks to GreenTech EC technology, they fulfil the two most important criteria in this area ideally: controllable and quiet.

Clean room ventilation: Filter fan units for clean rooms impose particular technical requirements. For example, they demand reliable, durable centrifugal fans, which must also be highly compact as well as low in noise and vibration. Equipped with groundbreaking GreenTech EC technology from ebm-papst, the fans can be conveniently controlled, monitored and visualised using software.

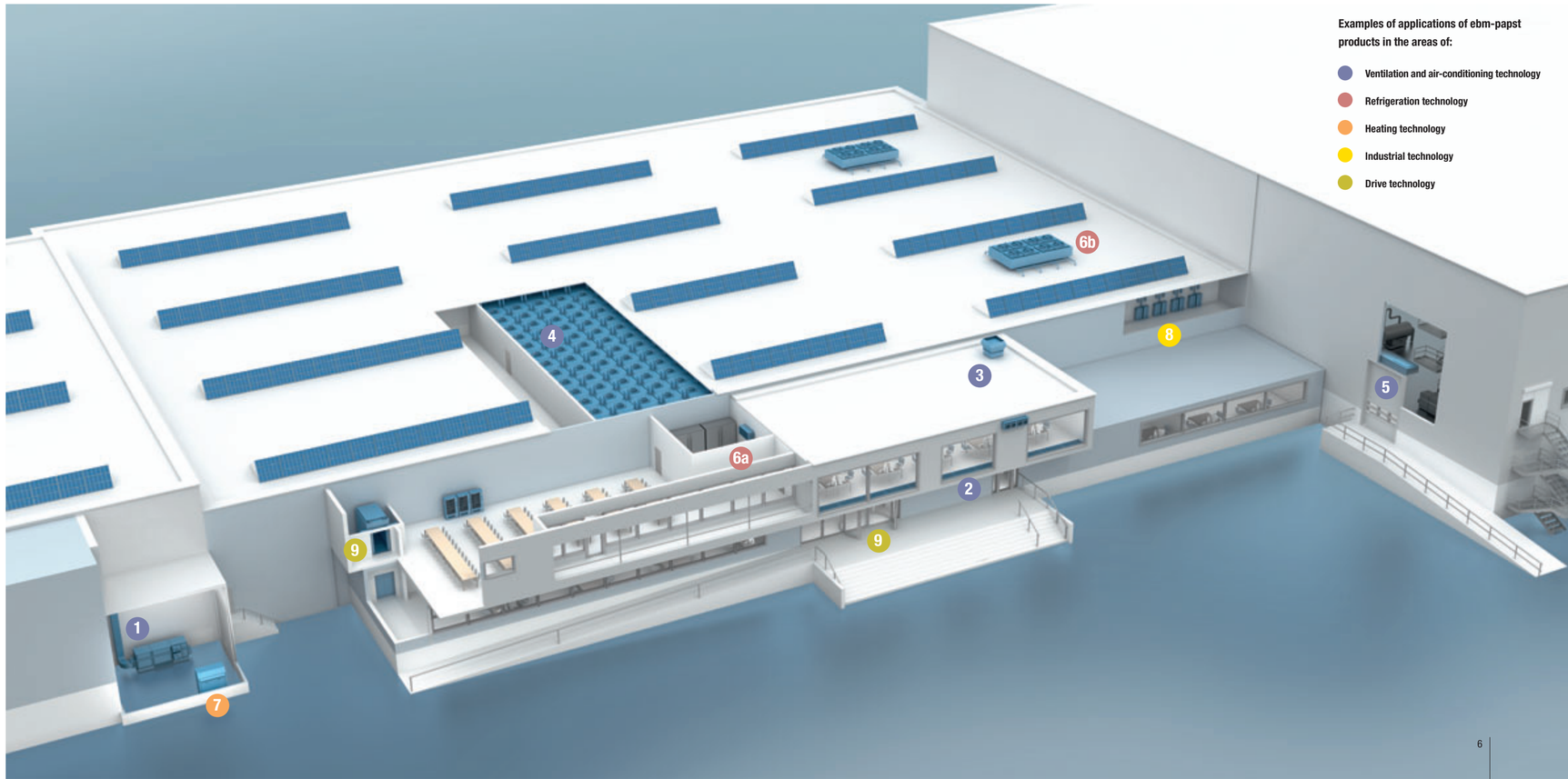
Cold/hot air curtains: In air curtain systems, which are intended to provide highly homogenous air jet and screening behaviour, efficient centrifugal blowers provide the necessary air flow. This keeps the warm air inside and the cold air outside. This allows significant energy savings to be attained with GreenTech EC technology.

Evaporators (a) and condensers (b): Fans in refrigeration technology see heavy use. Therefore, an essential requirement is that the installed axial fans work as energy-saving as possible. The high efficiency levels of the tried-and-tested ebm-papst fans provide optimum refrigeration capacity with minimum energy consumption.

Gas condensing boilers: For an optimal combustion process for condensing boilers, requirements include an exact mixing ratio of gas to air is the prerequisite for low emissions. These condensing boilers require blowers with the lowest energy consumption. Custom tailored to these requirements, ebm-papst offers compact and high-performance gas blowers in the heating capacity range up to 1 MW.

Electronics cooling: Energy-saving and continuously adjustable axial and centrifugal fans from ebm-papst, including some compact modules, provide efficient cooling of the electronics in control cabinets such as those found in large-scale inverters.

Door drives: Whether for the company headquarters, hospital, hotel or warehouse – drive solutions from ebm-papst for drives such as lift doors, sliding and revolving doors combine a high level of operating convenience with maximum reliability. With their groundbreaking GreenTech EC technology, their especially outstanding features are their high power density, simple controllability, smooth running and reliability.



ebm-papst technology for the home: saves on energy, not comfort

Did you know? Each household has as many as 20 products from ebm-papst in use. Not only in the building systems, but also in appliances and devices such as refrigerators, ovens, dishwashers, clothes dryers, range hoods, vacuum cleaners, lawn mowers, and even the tanning bed in the basement.

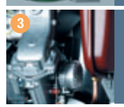
Those whose work involves the planning or design of single-family homes today face a variety of challenges: in addition to an attractive price, individual comfort must be offered, while also giving environmental considerations their due. In response to the demand for healthy, energy-saving residential spaces, the construction industry has long provided a wide range of natural construction materials and non-toxic paints and other materials. However, a surprising amount of potential also lies in two usually inconspicuous, but no less important components: fans and electrical drives in the area of building systems.

Examples of applications of ebm-papst products in the areas of:

- Heating technology
- Ventilation and air-conditioning technology
- Energy technology

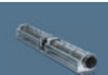
1 **Heat pumps:** In air/air or air/water heat pumps, whether for (a) indoor or (b) outdoor installation, efficient axial and centrifugal fans ensure extremely quiet operation. They are also highly compact and easy to control. A speed reduction feature enables additional energy savings and even quieter operation at night.

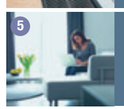
2 **Pellet heating:** Using pellet heating is becoming more attractive all the time – particularly in light of current energy price trends. In this application area, we offer suitable gearmotors for feed screws, quiet intake air fans and customised exhaust fans for exhaust gas discharge.



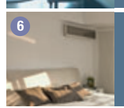
3 **Gas condensing boiler heating systems:** For condensing boiler technology, special blowers in GreenTech EC technology are used. Difficult requirements in terms of air flow, controllability, low-noise performance, compactness and service life can be met easily, for example using the innovative Lambda**Constant** gas blower system.

4 **Floor convectors:** The tangential blowers installed in floor convectors must feature a highly compact design and good noise behaviour. Equipped with GreenTech EC technology, it also enables energy cost savings.





5 **Controlled home ventilation:** Because residents do not want to hear the ventilation system, quiet fans are an absolute must. Centrifugal fans from ebm-papst provide exactly that. Moreover, solutions for air intake and exhaust in centralised (a) and decentralised (b) ventilation systems are highly efficient and reduce power consumption to a minimum.



6 **Air-conditioning units:** As quiet as a whisper, ebm-papst axial or centrifugal fans also work in air-conditioning units typical of residential buildings. With its integrated electronics, GreenTech EC technology guarantees not only easy open and closed-loop controllability, but also minimum energy consumption.

7 **WC ventilation:** In bathrooms/WCs in which no window can be installed, fans guarantee reliable air exchange. With quiet performance and simple, user-friendly control, they enable flexible operation that is always matched to the requirements.

8 **Inverse rectifiers for photovoltaics:** Solar energy is also becoming increasingly attractive for private households. However, the direct current generated by photovoltaic modules must first be transformed into usable alternating current by inverse rectifiers. Continuously adjustable compact fans improve the efficiency and reliability of this central component.