



RadiPac EC centrifugal fans

Perfection in air handling



ebmpapst

The engineer's choice

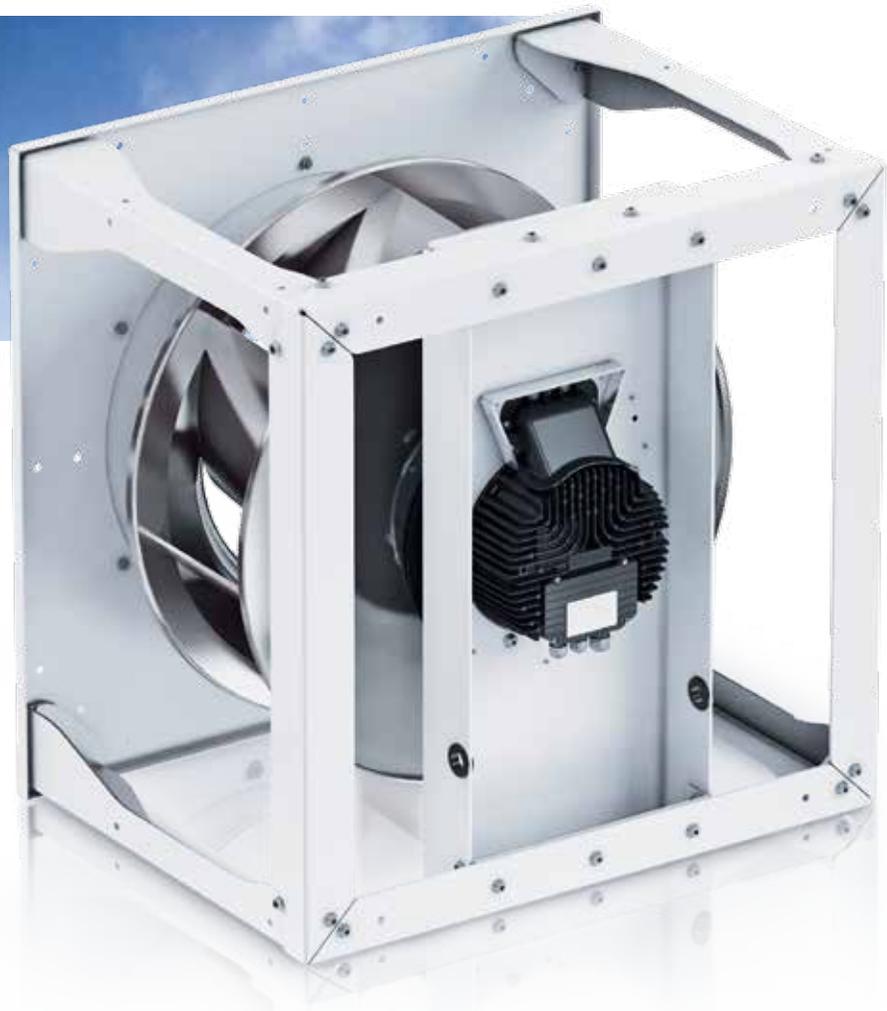
A coherent concept

RadiPac stands for ...

Real performance information, as the performance data for the entire fan, i.e. high-performance impeller, GreenTech EC motor and control electronics, as given in all documentation are based on real measurements and not just calculations.

Effective logistics, as a single RadiPac part number encompasses all components which are required to perform your specific ventilation task – one-stop shopping at its best.

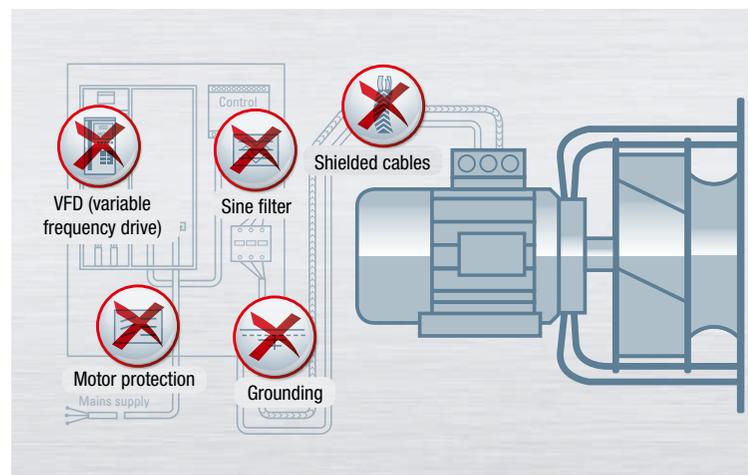
Simple commissioning, as all functions necessary for operation are already on board and perfectly matched.



Simple and safe

Together, the electronics and motor form one unit – this doesn't just save space, but also ensures easy installation: in this respect, an integrated electronics system for commutation and control replaces an external VFD (variable frequency drive). Because the motor and electronics in the system are already perfectly matched, additional electronic filters and shielded cables are unnecessary, as is an external motor protecting switch. The result: no more cost-intensive adjustments before putting into service and no need for grounding and shielding measures. All you need is – Plug and Play!

Conventional fans



A clear advantage over conventional fans with additional devices:

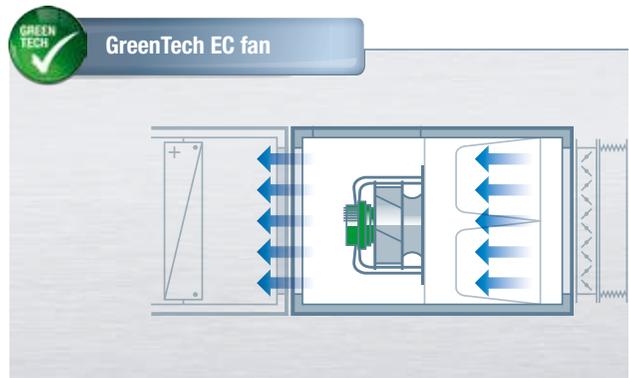


Efficiency is down to the system

“What counts is the result!” – this also applies to efficiency. After all, it is not just the efficiency of individual components which is decisive, but rather the result of their interaction. And it is here that RadiPac really and truly excels, beating anything on the market. Impeller, the impeller, motor and electronics system are all optimally matched, resulting in an overall efficiency of well above 60%. The GreenTech EC motor in external rotor design adds its more than fair share to this impressive efficiency. It is a mains-powered, permanently-energised synchronous motor with electronic commutation (also called BLDC). Its efficiency is significantly higher than efficiency class IE4, and this is achieved without even using any supply-critical rare-earth magnets. Other permanent magnet motors of comparable efficiency with internal rotor designs require the use of these rare-earth magnets. At the same time, these PM motors are also less compact and less easy to instal, and putting them into service comes with a cost – for the additional devices and the set up they require. Not so with the RadiPac – here, efficiency is easy and uncompromising!

Compact design

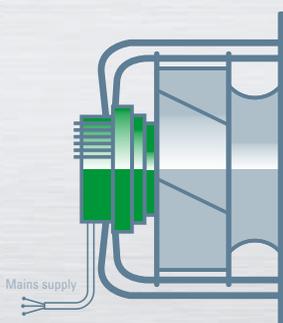
The high-performance impeller is mounted directly onto the rotor of the external motor. This saves space and allows the entire rotating unit to be balanced at the same time.



Unrivalled compactness – the GreenTech EC fan ...

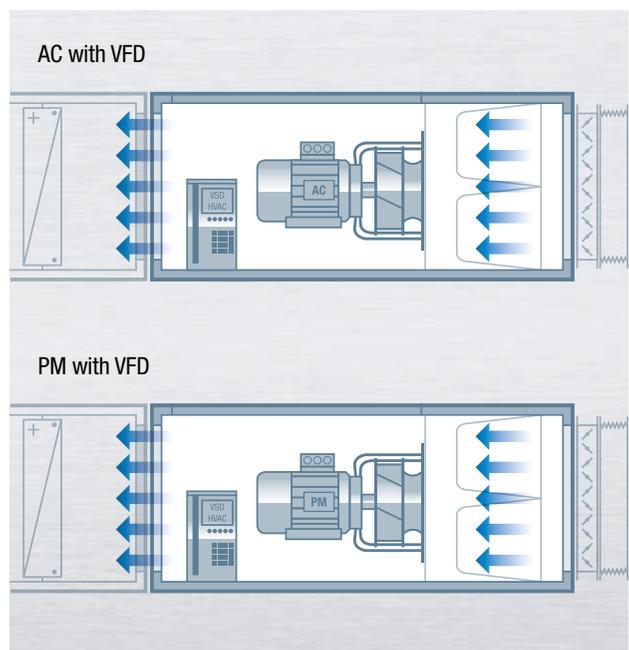


GreenTech EC fan



the GreenTech EC fan can be installed quickly with all features already on board.

Conventional fans



... in contrast to conventional fans.

From impeller to motor system

The better the interaction works, the more impressive the result. Individual RadiPac modules are precisely matched, making for perfect interaction and total excellence: highest possible system efficiency. The basis for this is a combination of highly-developed components and innovative technology.

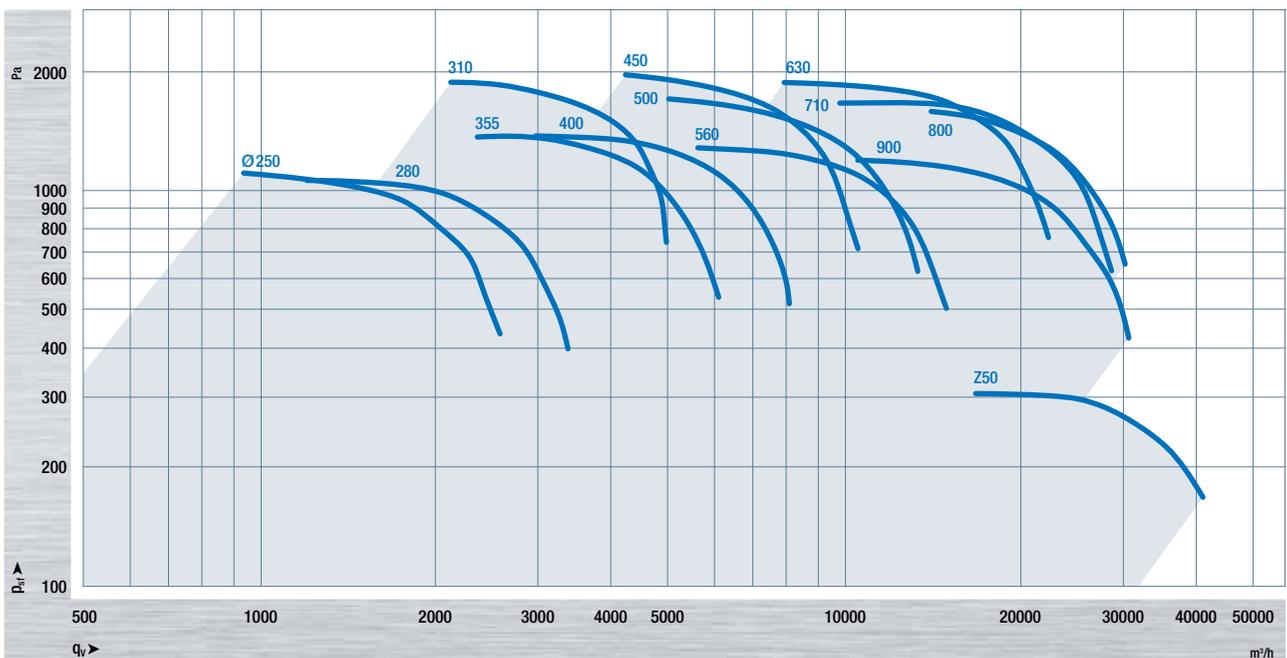
In a class of their own: the new RadiPac models

RadiPac EC centrifugal fans score solidly with their excellent characteristics, from high efficiency to easy handling and low space requirements. And in doing so, the product range completely covers the air performance spectrum depicted below.

The symbols in the box on this page show you at a glance where the all-rounders excel. In addition, all products in the RadiPac range come with UL, CSA (Canadian Standard Association) and GOST approvals.

RadiPac benefits at a glance:

 Efficiency Low power consumption High air performance	 Plug & Play Low installation cost and commissioning work
 Power density High ventilation efficiency High reserve capacity	 Compactness Low space requirements
 Controllability Air performance adjustable to requirements	 Monitoring Recording of operational data and status
 Noise reduction Low noise emissions	 Sustainability Conservation of resources during development, production and commissioning



Air performance range of the RadiPac series



High-performance impeller

- + High structural efficiency**
 - Aerodynamically optimised blade duct
 - Integrated diffuser extension
 - Inlet nozzle adjusted to impeller
- + Low noise emissions**
 - Diagonal trailing edgestrailing edges for optimised flow control
 - Integrated Integrated diffuser extension
 - Inlet nozzle adjusted to impeller
- + Low vibration**
 - Dynamic balancing of the impeller rotor unit minimises generation of structure-borne noise and reduces bearing load
- + Robust design**
 - Suitable for permanently high peripheral speeds
 - Corrosion-resistant aluminium
 - Consistently robot-welded blades



Efficiency



Power Density



Noise

GreenTech EC motor

- + Unrivalled compactness**
 - Impeller is directly mounted on motor rotor
- + High efficiency**
 - Low copper and iron loss
 - No slip loss thanks to synchronous running
 - No magnetic reversal losses in the rotor due to permanent magnets being used
- + Economical operation**
 - Optimised commutation permits partial-load operation up to 1:10 while still maintaining high efficiency
- + Low noise emissions**
 - Commutation and stator design make for low-noise magnetisation of the exciter field
 - High, acoustically imperceptible cycle frequency
- + Long service life**
 - Maintenance-free bearings
 - Brushless commutation
- + Safe operation**
 - Insulated bearing system to avoid bearing currents



Efficiency



Noise



Compactness



Sustainability

Only **optimised** interaction ensures
that **the whole** is more than the sum of its parts.



Electronics with connection section

- + Versatile**
 - Continuously variable speed settings
 - Control signal 0-10 VDC and MODBUS
 - Integrated PID controller
- + Universal applicability**
 - Various voltage types for worldwide use
 - Suitable for 50 and 60 Hz mains
- + Safe operation**
 - Integrated locked-rotor and over-temperature protection
 - Active PFC for 1~ powered motors
 - Environment-resistant cable glands
- + Simple putting into service**
 - Central terminal connection area for power supply, alarm relay, control and communication
 - Safe separation of terminal connection area and electronics
 - High-quality terminal clamps
 - No need for complex coordination



Control



Plug&Play



Compactness

Compact all-rounders: RadiPac EC centrifugal fans

No matter which variant you choose, RadiPac EC centrifugal fans always fit the bill, with sizes from 250 mm to 1250 mm, and versions from support brackets to a cube design.

Robust and stable: RadiPac in cube design

The RadiPac cube variants are designed for installation with a horizontal shaft. This mounting position allows the RadiPac to be mounted on spring or rubber vibrating elements in order to decouple vibration. Moreover, they are stackable and easy to handle. There are also advantages in terms of sustainability, as packaging material is not required, and must therefore not be disposed of afterwards.

Benefits

- Easy handling during transport and installation
- Allows vibration decoupling
- Protects motor system and impeller
- Installation with horizontal AND vertical motor shafts
- Optimised, ex-works positioning of the nozzle
- No need for packaging material or its disposal

Quiet operation: RadiPac in support bracket Plus design:

The support structure variant is also designed for installation with horizontal shafts and allows the fan to be decoupled from its surroundings.

Benefits

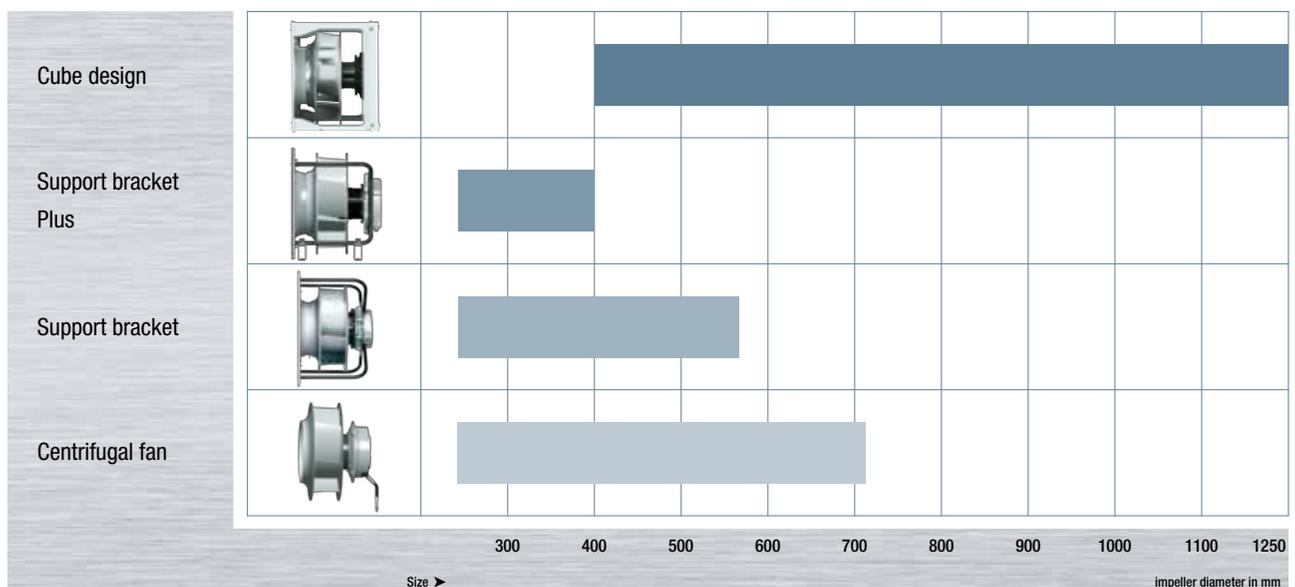
- Allows vibration decoupling
- Optimised, ex-works positioning of the nozzle

Quick mounting: RadiPac in support bracket design

The unit can be attached directly to the housing of the customer device with the pre-mounted nozzle plate: quickly, safely and with little effort.

Benefits

- Quick and easy installation
- Aerodynamic
- Installation with horizontal AND vertical motor shafts
- Optimised, ex-works positioning of the nozzle



Mechanical designs in the product range (by impeller diameter)

ebm-papst
Mulfingen GmbH & Co. KG

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



ebmpapst

The engineer's choice