

Residential ventilation of the future

Sustainable solutions for better indoor air quality

Those who decide to use a residential ventilation system will ensure better indoor air than is possible with manual ventilation. However, it is just as important to record the actual air quality parameters, the indoor air quality (IAQ). This also improves health and well-being and can provide additional potential for savings from the ventilation systems in private households.

Fans are at the heart of efficient residential ventilation systems. They ensure air exchange and are as efficient, powerful, and quiet as possible. ebm-papst offers the right product solutions for specific applications – from centralized to decentralized residential ventilation systems with heat recovery.

Central residential ventilation: second-generation efficiency

The RadiCal has stood the test over ten years in use in centralized residential ventilation units. Its successor is now setting new standards as a second-generation device. Aerodynamic optimizations include the "twisted" blade geometry and the completely revised housing box with diagonally arranged struts. Compared with its predecessor, the RadiCal 2 has improved peak efficiency, a higher air flow and a significantly lower noise level of up to 3 dB (A). Thanks to the new FlowGrid and the revised EC motors, additional noise benefits can be achieved in the ventilation unit.

Fans for decentralized residential ventilation

Push-pull ventilation systems, for example, are used for decentralized residential ventilation. The fan installed must be reversible and always supply a constant air flow in both directions of rotation, even when the wind force is changing. The AxiRev is specially designed for this – it achieves a very steep pressure/air flow characteristic curve and provides a performance which does not depend on the weather conditions. The blade design of the AxiRev is patented and ensures minimal noise emissions thanks to the blade tips and openings at the blade ends.

Better ventilation with indoor air quality

Indoor air quality (IAQ) is concerned with measuring, monitoring, and improving the factors that ensure healthy air, including the number of people present, furniture, carpets, or even technical equipment. These result in measurable indicators such as CO₂, fine dust, or moisture content in the air. This requires sensors that record the indoor air quality parameters, as well as a platform that analyzes the data, makes it available, and optimizes the building control system accordingly. ebm-papst neo offers both sensors and gateways for this, meaning that the residents always have an up-to-date overview of the CO₂ content of the air, for example, and the system automatically adjusts accordingly.

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Fig. 1: The RadiCal has stood the test over ten years in use in centralized residential ventilation units. Its successor is now setting new standards as a second-generation device.



Fig. 2: AxiRev: Push-pull system for decentralized residential ventilation with ceramic heat exchanger.

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About ebm-papst

The ebm-papst Group, a family-run company headquartered in Mulfingen, Germany, is the world's leading manufacturer of fans and motors. Since it was founded in 1963, the technological leader has set international industry standards with its core competencies in motor technology, electronics, digitalization, and aerodynamics. ebm-papst offers sustainable, intelligent, and tailor-made solutions for virtually every requirement in ventilation and heating technology.

In the 2023/24 financial year, the Group generated turnover of EUR 2.408 billion. It employs just under 14,000 people at 30 production sites (including in Germany, China, and the U.S.) and in 50 sales offices worldwide. ebm-papst sets the benchmark in almost all sectors, such as ventilation, air conditioning and refrigeration technology, heating technology, information technology, mechanical engineering, intralogistics, and medical technology.

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