

Heat pumps – Gas condensing technology – Hybrid systems Efficient heating technology for the energy revolution

To be climate neutral by 2050, the EU needs a heating revolution. Heating with heat pumps, gas condensing technology and hybrid systems reduces emissions and saves money. System components from ebm-papst meet the highest efficiency requirements in the latest heating applications.

Today, those having to choose a future-proof heating system are spoiled for choice. The decision is not easy, regardless of whether the system is for a new building or a renovation: heat pump, gas condensing technology or a hybrid system? All of them have their advantages and disadvantages. ebm-papst offers suitable, energy-saving components for every application.

Energy from the environment

Air-water heat pumps are frequently used for sustainable heat generation as they draw energy from their environment. If they get their energy from renewable sources, they can even be operated as carbon neutral. Heat pumps for indoor installation draw in outside air through a duct and blow the exhaust air out using another. RadiCal centrifugal fans from ebm-papst are ideally suited to this thanks to a high pressure increase and minimized energy consumption and noise characteristics. In outdoor installations, the air is drawn in by the device itself. Here, the AxiEco axial fans from ebm-papst stand out with their optimum flow and quiet operation.

Clean combustion from a single source

Modern gas condensing boilers can easily scale their heat output and are 'renewable ready', i.e. they can be combined with renewable energy sources later on. Together with a solar heating system, they heat water consumed in the summer. In winter, a pellet stove with a built-in water pocket can be connected as a heating source. Modern condensing boilers are controlled electronically and flexibly adapt the heating output to the heating load. Installed ebm-papst components with a broad modulation range increase the efficiency of the entire device. The CleanEco (pneumatic) and CleanVario (electronic) combustion control types provide a perfectly coordinated complete system consisting of a boiler control unit (BCU), gas valve, Venturi and gas blower. CleanVario is equipped as a gas-adaptive system for future fuels, such as hydrogen admixture, liquid gas or biomethane, and can guarantee a constant output even if there are increased fluctuations.

The best of both worlds

Hybrid systems consisting of a gas condensing unit and a heat pump are particularly useful if gas power is required in booster mode or at very low outside temperatures. The heat pump is responsible for the heating base load; the gas-condensing boiler can be used as a booster. The time at which the gas condensing technology jumps in can be individually controlled, meaning that the most economical operating mode can be selected. The control system – the 900H Series Control Platform from ebm-papst – controls the output of the gas condensing unit and heat pump, as well as the connection or sole operation of condensing boilers at peaks. The CleanVario electronic combustion system constantly monitors the combustion and can

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make the opportunities of predictive maintenance a reality thanks to the gas blower's LIN bus capability.

Funding opportunities from the state

In addition to technology, financial support from the state is also gaining momentum to create even more incentives for investing in sustainable heating technology: Germany has around six billion euros of funding available for 2021. More information on this can be found in the brochure "Moderne e-Heizungstechnik mit Geld vom Staat" (Modern e-heating technology subsidized by the state) – March 2021 issue of Bundesverband der deutschen Heizungsindustrie (BDH – Federation of German Heating Industry).



Fig. 1: Thanks to its low noise level, the AxiEco axial fan from ebm-papst is particularly well suited for use in noise-sensitive areas.



Fig. 2: The higher-level control system – the 900H Series Control Platform from ebm-papst – controls the output of the gas condensing unit and heat pump, based on the situation.

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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 drives. Since the technology company was founded in 1963, it has continuously set the global industry standard with its core competences in motor technology, electronics, digitization and aerodynamics. With over 20,000 products in its portfolio, ebm-papst provides the best energy-efficient, intelligent solution for virtually every ventilation or drive-engineering task.

In fiscal year 2020/21, the "hidden champion" generated revenues of € 2.129 billion. The group employs roughly 15,000 people at 29 production sites (in Germany, China and the USA, to name but a few) and in 51 sales offices worldwide. ebm-papst sets the benchmark with their fan and drive solutions which are used in almost all industries, such as ventilation, air conditioning and refrigeration, heating, automotive, information technology, mechanical engineering, household appliances, intralogistics and medical engineering.

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