

Compact, quiet and efficient

New series of plug fans

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In light of increasingly stringent environmental and economic requirements, ebmpapst has revised the so-called plug fan series, which was designed specially for operation in ventilation and air-conditioning technology. Available in eight sizes with impeller diameters of 250 to 560 mm and drive outputs of 400 watts to 6 kilowatts, the new designs cover all conceivable applications in the field of ventilation and air-conditioning technology or in climate control systems (so-called HVAC systems). The feasible air flows lie between 300 and 10,000 m³/h with a corresponding pressure increase of up to 1,000 Pa.

The overall efficiency and acoustic behaviour of the fans has been significantly improved for the new plug fans. The new blade geometry with a diagonal trailing edge has positive effects on the aerodynamic behaviour and on the running smoothness of the fans. The same is true for the implemented nozzle contour. Previously, a standard pressure tap was integrated here to regulate differential pressure via a threaded nipple. A ring line is also possible on request.

Plug fans are very compact because the EC motor is integrated directly in the impeller. A belt drive between the motor and the fan, which is commonly used otherwise, is not necessary. This reduces not only the required installation volume – always desirable for ventilation and air-conditioning technology – but also the associated installation effort.

The power electronics integrated in the EC motors are compatible with all common supply voltages; depending on the motor type, either from 200 V to 277 V for single-phase AC or 380 V to 480 V for three-phase current supply. The frequencies lie at 50 or 60 Hz, respectively. The air performance and efficiency are unaffected by frequency changes. This means that the same fan type can be operated on different power systems without further ado.

The fans are designed for a service life of more than 40,000 operating hours. That corresponds to a continuous operation of more than 4.5 years, operating under full load and at the maximum permitted ambient temperature. When operating under partial load or at lower ambient temperatures, the value is significantly higher.

Different installation variants are available, e.g. with a "spider mount" or attached mounting plate for a simple anti-vibration mount, which is usually implemented during design-in.

With this new EC plug fan series, highly efficient, easily regulated and high-performance fans for ventilation and air-conditioning technology are easily accessible. The fans significantly exceed the requirements of energy efficiency class A+ stated in German manufacturer's association RLT Directive 01, "General Requirements for Ventilation and Air-conditioning Devices" (for more information, visit www.rlt-geraete.de).



Figure 1: Selection from the new EC plug fan series



Quelle: Wolf GmbH

Figure 2: Mounting example of plug fans in a central air handling unit

About ebm-papst

The ebm-papst Group is the world's leading manufacturer of fans and motors and is a pace setter for the ultra-efficient EC technology. In the last fiscal year, 2007/2008, the company achieved a turnover of 1.076 billion EUR. ebm-papst employs nearly 10,000 employees at 17 production facilities (including those in Germany, China and the USA) and 57 sales offices world-wide. Products of the global market leader are represented in many industries, including ventilation, air-conditioning and refrigeration technology, household appliances, heating engineering, in IT/telecommunications applications, as well as those in automotive and commercial vehicle engineering.

More information can be found at www.ebmpapst.com
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