



Ecological cooling and economical saving

## Energy-efficient fans for refrigeration technology

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Refrigeration technology makes great demands of the fans used, for example, in condensers, evaporators and refrigeration units. They must be efficient, quiet, durable and reliable, as they are used with high operating times.

For these areas of application, ebm-papst offers energy-efficient fans with GreenTech EC Technology, which meets these requirements.

With refrigerated cases, significant energy savings can be achieved by the fans with GreenTech EC Technology. In contrast to conventional shaded-pole motors, with their significantly poorer efficiency, the energy-saving fans from ebm-papst achieve efficiency of over 65%, thus reducing their energy consumption to 1/3. With a 100m refrigeration unit and with 200 energy-saving fans of size 200, for example, the savings for the user are 70%. With an electricity price of 11.69 Euro cents per kWh, this corresponds to a total of Euro 4,400 per year. In addition, the aerodynamically optimised fans operate very quietly and effectively. Motor speeds can be set via a programming interface. Their compact design ensures space-saving and above all easy installation. Also the conversion of existing applications is possible without problem. In this case, ebm-papst offers energy-efficient iQ motors, which are mechanically compatible with existing shaded-pole motors, and which have a high efficiency rate of up to 65% and the same installation dimensions, allowing a straightforward 1:1 exchange. Axial impellers with a diameter of 154 to 254 mm can be fitted in the same way on the iQ motor to create an energy-efficient solution. The intelligent electronics regulate voltage fluctuations so that the speed remains constant. Today, several well-known supermarket chains are making use of this ecologically and economically rational 1:1 exchange option.

Comparable energy savings can be achieved in many other applications. In this way, ebm-papst has set benchmarks with the energy-saving HyBlade® fans for condensers and evaporators. Thanks to modern GreenTech EC technology and aerodynamically optimised vane geometry, the GreenTech EC fans, which are available in sizes 172 to 990 mm diameter, convince with energy savings of up to 50% compared to AC fans. This applies not only in full-load operation, but also and especially in partial-load operation. In addition, the speed can be controlled for EC technology. In other words, it can be adjusted to the respective cooling requirements, which provides further potential savings. The result is substantially lower energy costs which are quickly felt in practical operation.



Figure 1: Energy-efficient products in GreenTech EC technology for refrigerated cases



Figure 2: The range of evaporators now benefits from the innovative HyBlade® fans in sizes 300, 350, 400 and 450.

### **About ebm-papst**

The ebm-papst Group is the world's leading manufacturer of fans and motors and is a pioneer and pacesetter for ultra-efficient GreenTech EC technology. In the last fiscal year 09/10, the company generated turnover of 986 million EUR. ebm-papst employs over 10,000 people at 17 production facilities (including Germany, China, USA) and 57 sales offices worldwide. 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.