



The efficiency of the future – available already!

ErP Directive demands high minimum efficiency ratings for fans

Minimum efficiency ratings for fans in the EU

By adopting the Kyoto Protocol, the European Union has undertaken to reduce CO₂ emissions by at least 20 percent by 2020. To achieve this climate goal, the EU adopted the EuP Directive (Energy-using Products Directive) in 2005. Renamed as the ErP Directive (Energy-related Products Directive) in 2009, it will help with studying the savings potential of numerous energy-related products and stipulating minimum requirements. Limits for fans were defined in June 2010 and are mandatory now.

Which fans are affected?

Fans of all types (axial fans, centrifugal fans with forward or backward curved blades, cross-flow and diagonal fans) between 0.125 kW and 500 kW electrical power input are affected. This applies to fans that are operated as "stand-alone" devices and those which run as components integrated in a device or system.

From what point on is the directive binding?

1st stage starts January 2013

2nd stage starts January 2015

How will it be implemented?

The EU defines the minimum efficiency levels in the ErP implementation regulation for fans. These are defined at best operating point based on electrical power input. To decide whether a fan is compliant with the ErP Directive, the efficiency of the complete fan is assessed, i.e. the unit comprising control electronics (if fitted), motor and fan impeller (see figure below).



Control electronics
Monitor

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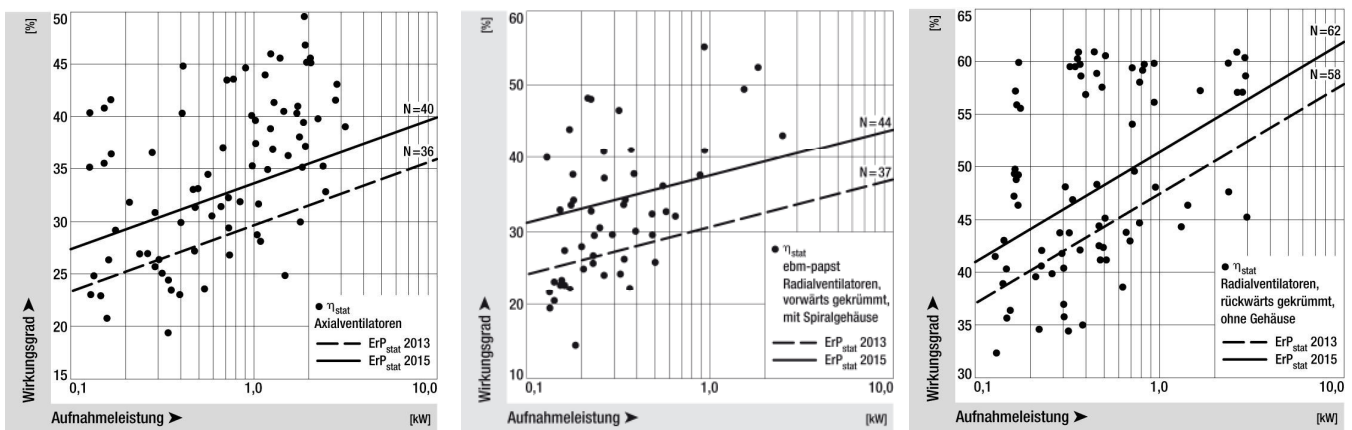
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Fan impeller
Fan

The corresponding limits have been set very high. The three images illustrate the limits that are set to become valid in 2013 and 2015, shown in the form of black lines. At the same time, the efficiency levels of commercial axial and centrifugal fans with power ranges of up to 10kW are listed in this diagram from the large product range of ebm-papst.

The "efficiency level cloud" shows that all fans do not meet the future requirements, and will no longer be allowed to be placed on the market in Europe after the dates specified. But it can also be seen that for every fan that will no longer be permitted in the future, there is already an energy-efficient replacement that not only fulfils the specifications of the directive, but actually exceeds them.



- Efficiency
- Input capacity
- Axial fans
- Centrifugal fans, forward curved, with scroll housing
- Centrifugal fans, forward curved, without housing

To which countries does the directive apply?

This directive will be mandatory for all 27 EU countries. The directive applies to all fans sold or imported in Europe as well as those integrated as components of other devices that are imported into Europe.

Why has this law come into being?

With the aim of reducing CO₂ emissions considerably!

The future belongs to GreenTech EC technology

In light of these facts, the innovative GreenTech EC technology developed by ebm-papst for fans with an electric drive exhibit all their strengths. Compared to fans with AC motors, GreenTech EC motors from ebm-papst attain an efficiency of over 90 percent. This enables achievement of significant energy savings compared to conventional AC solutions. In addition, GreenTech EC fans have a controllable speed, so it is possible to

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adapt the air volume to the respective requirements. The positive consequence is even more substantial energy savings. Thanks to the perfect interaction of motor, electronics and aerodynamics, the ebm-papst GreenTech EC fans not only make an impression by their energy efficiency, but also operate extremely quietly due to the optimised commutation technique and the aerodynamic design of the impellers. And if that's not enough, their other benefits include their reliability and durability.

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