



TECHNICAL GUIDE

EC FAN TECHNOLOGY



EC fan technology, EC components, EC vs AC and EC features and benefits



VES

Better air for the built environment

EC FAN TECHNOLOGY, EC COMPONENTS, EC vs AC AND EC FEATURES AND BENEFITS

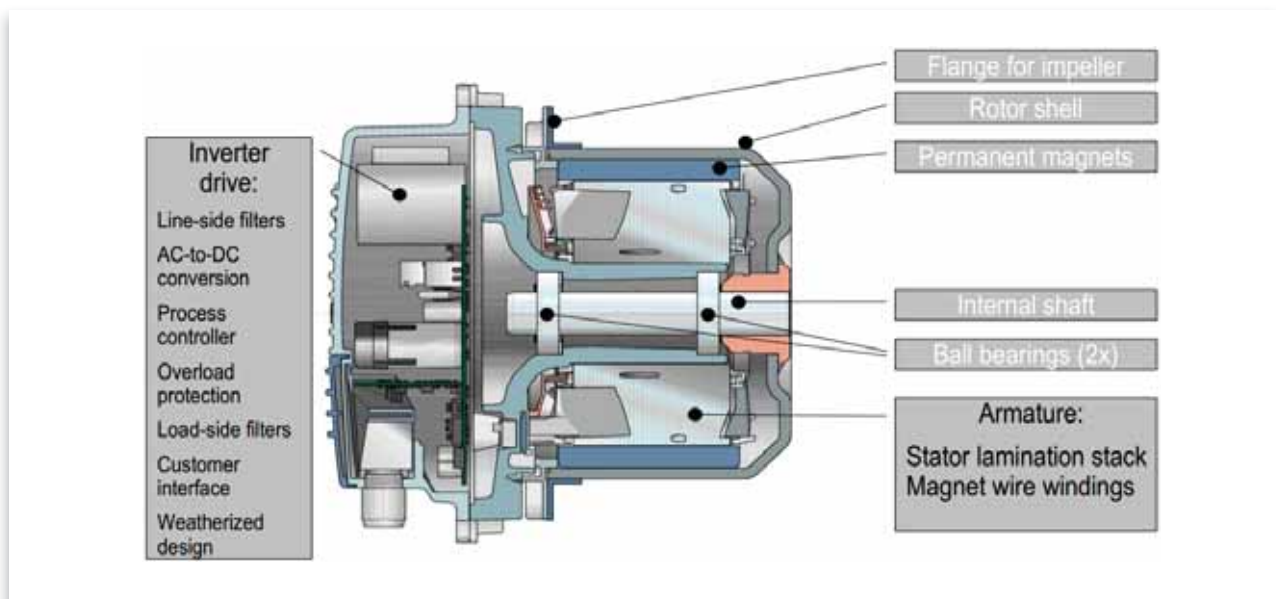


EC technology is intelligent technology, using integral electronic control to ensure that the motor always runs at optimal load.

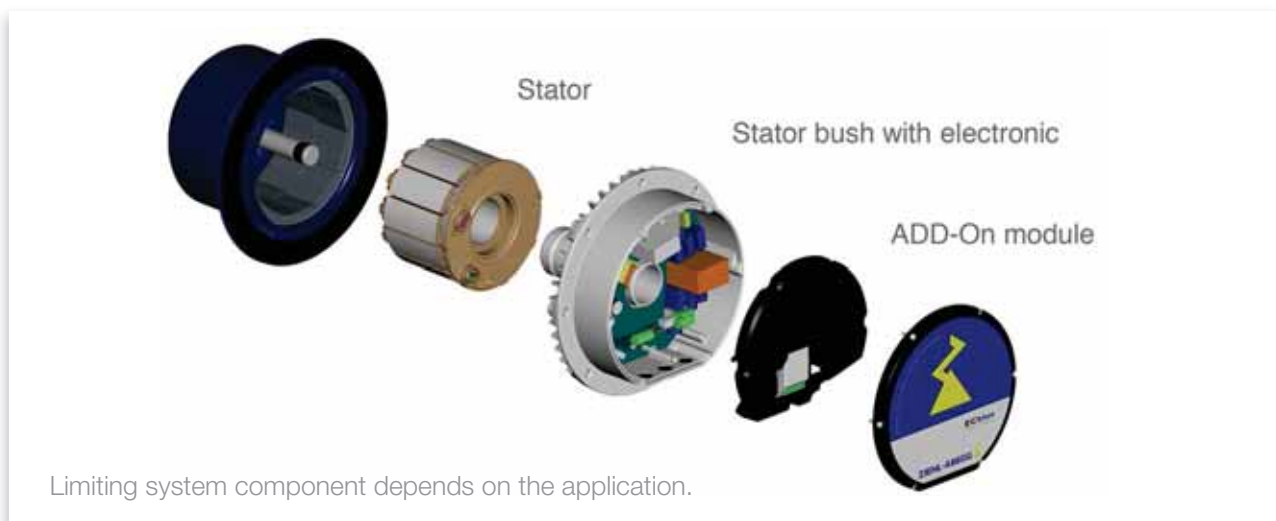
EC Fan Technology

EC stands for Electronically Commutated and it combines AC and DC voltages, bringing the best of both technologies. The motor runs on a DC voltage but with a normal AC supply. These fans are capable of intelligent speed control with further reduced energy consumption.

EC Electric motors utilise a permanent magnet in the secondary field. When the rotor is energised it creates a repelling magnet, thus allowing the rotor to rotate within the field. 30% less energy is saved in EC over an AC motor as the secondary magnetic field does not need to induce energy to create a magnetic field.



EC Components

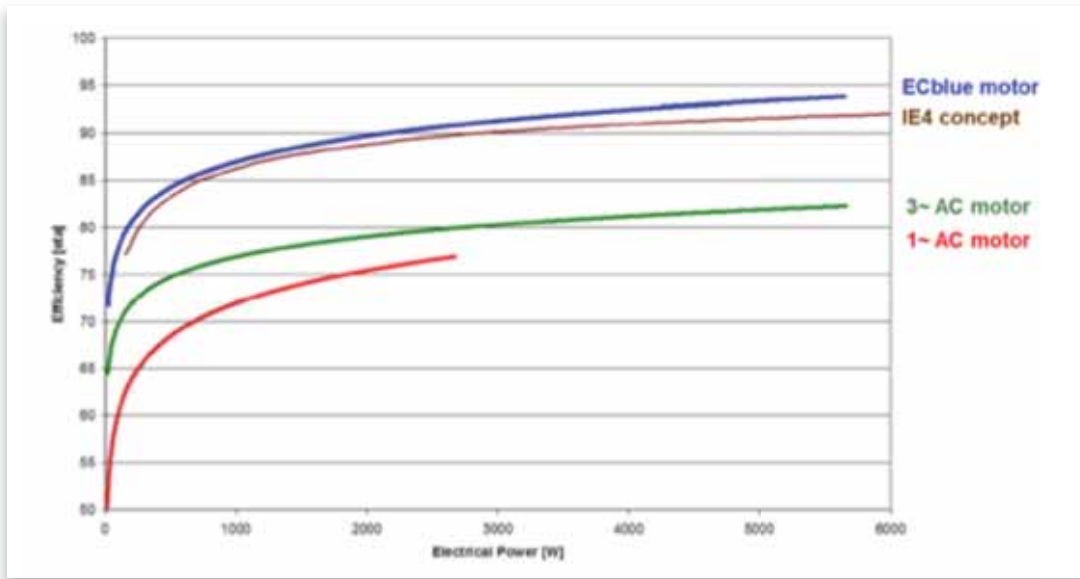


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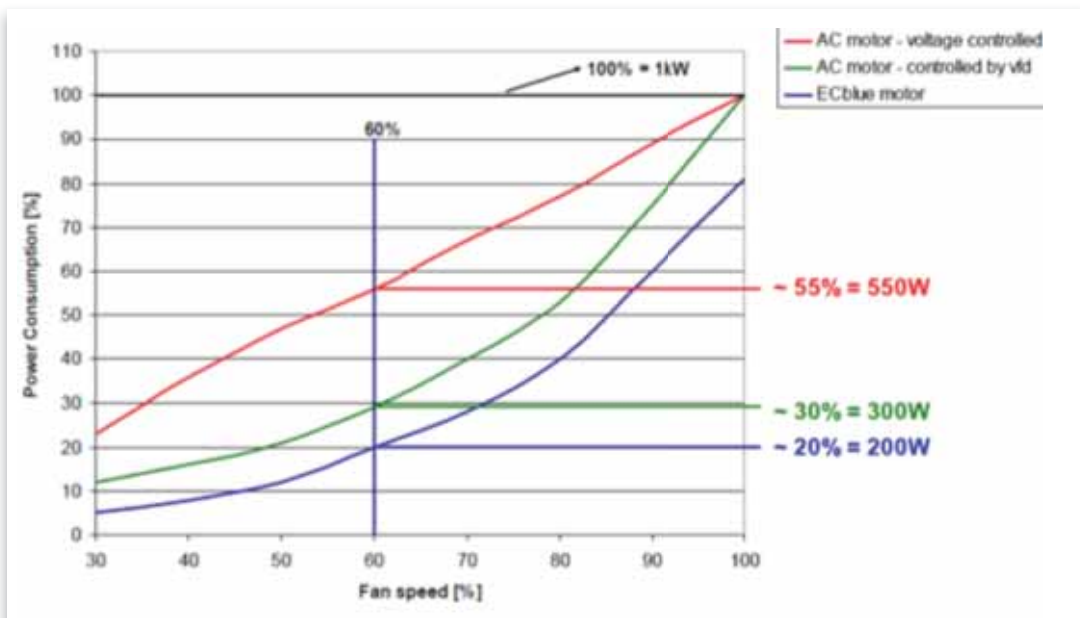


Why EC is better than AC

General efficiency differences:



Example:



- EC technology offers energy savings up to 70%
- Cooler running motors reducing the overall demand on cooling fans
- EC fans offer built in speed controllers that can be pre-programmed or easily compatible with BMS systems for demand ventilation

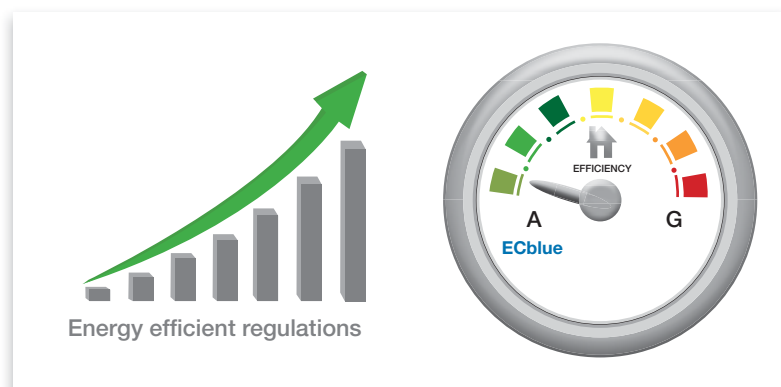
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EC Fan Features and Benefits



- High efficiency - compact motor controller solution cooling effect by air stream around the motor /controller is optimum
- Future proof and ready for ErP 2015
- Reduced energy consumption. On average 30% less electricity than conventional fans
- Significant noise reductions within the motor due to switching frequencies of built in inverter drive
- No need for additional motor protection. EC fans have their own motor protection for over current and motor temperature
- Easily integrated with BMS control
- Easy to maintain, maximum service life - fit and forget
- Speed constant operation over whole voltage bandwidth of the Ecblue types
- Space saving design due to external rotor motor concept
- Maximum speed independent from main/power frequency
- Integrated Status LED - no separate display or other tool for status failure diagnostic
- High flexibility by different add on modules - easy extension adaption possible
- Speed controller or PID closed loop function by AM Premium module for application refrigeration, air volume, differential pressure control, temperature control, air velocity and more - no external PID control unit necessary
- Maximum availability due to wide voltage input:
 - 200 V, 50/60 Hz
 - 240 V, 50/60 Hz
 - 380 V, 50/60 Hz
 - 400 V, 50/60 Hz
 - 440 V, 50/60 Hz
 - 480 V, 50/60 Hz



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Product range

VES AHU units are fitted with Ziehl; one of the leading fan manufacturer's ECblue fan, which delivers increased efficiency, as a result of consuming less power compared to a standard AC motor.

VES offer a wide variety of EC fans and motors in all of their products. VES also offer a wide variety of EC fan replacements for all types of ventilation, these include EC Centrifugal fans, EC Axial fans, EC forward curved blowers and EC plug fans.

Axial Fans



Centrifugal fans

