



## Press Release

### Maintenance led fan coil unit upgrades

When it comes to improving the energy efficiency of HVAC equipment there is normally a significant investment required for variable speed drives or high efficiency fan upgrades, and a detailed business case is required to justify the work required. Energy Managers and Facilities Management companies will tell you that this can be a long and painful process often ending with nothing being done at all. Thankfully there is a much easier and more cost effective way to reduce HVAC energy consumption and that is to consider upgrading component parts of the system as and when they fail. There is no better example of how this works than the ubiquitous fan coil unit.

You'll find fan coil units in most office buildings, and in a large tower block the quantities can run in to the hundreds. Since around 2007 it is more likely that an EC/DC type fan coil unit would be specified in a new building because of their recognised superiority in terms of quietness and efficiency but that still leaves an enormous number of less-efficient AC units installed in UK buildings. Based on UK sales of this type of fan, there could easily be over 1 million of these fans still operating in our buildings, with some installed up to 20 years ago.

Inevitably the fans in a fan coil unit will eventually fail. Their bearings wear out and they start to become noisy, which means they have to be replaced. An engineer will come along, remove the old unit and send it off for repair or find a replacement new part. Job done, the fan coil unit is now as quiet and efficient as it was when new – up to 20 years ago. Wouldn't it be great if you could make it as quiet and efficient as a brand new EC/DC fan coil unit instead. Well of course you can.

Whether it's a self-contained "pod fan" with a motor integrated into the impeller or a "fan deck" with separate motor and shaft driven fans, they are easily replaced with the latest EC/DC fan coil blowers.

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### Pod Fans

These have a standard flange which bolts to a bulkhead in the fan coil unit. The AC and EC versions are practically identical and have the same flange. Simple, remove one and fit the other.

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Fan Decks: EC Blower



AC Blower

An AC fan deck can be converted to EC by simply mounting the EC blowers on the metal deck instead of the AC motor, shaft and impellers. The easiest way to do this is to purchase a new deck to the same pattern as the old one with EC blowers mounted on it. The whole deck can then be refitted to the unit as one assembly.



AC Fan Deck



EC Fan Deck

### Wiring Changes

There are some minor changes required to the wiring, which also serve to improve the controllability of the unit. Both types of EC replacements can be obtained with pre-wired looms which plug in to the fans. One loom is connected to the switched mains supply on the unit to provide the power to the motors. The other loom provides step-less speed control and can be either connected to a low cost potentiometer or to a suitable 0-10V control signal from the BMS system. The fan speed can then be accurately set to the required level.



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### Business case

There still needs to be a business case to make any changes but with the part costs being similar, the sums are very easy:

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	Replace with AC	Replace with EC
Labour content	Remove AC unit for repair Return to fit repaired AC unit	Remove AC unit and replace with EC unit in one visit
Parts cost	Similar	Similar
Energy saving	None	66%
Control method	3-step switch	Rotary dial or BMS
Speed setting	Low-med-high	Infinitely variable
Replacement life	2-3 years	Over 5 years

Pod fans have a life expectancy of 40,000 hours so using them instead of a fan deck will also significantly increase the time between failures, giving another cost saving. Occupant feedback on EC blowers is that they are much quieter too giving an additional benefit.

If ever there was a “no-brainer” for energy efficiency this is it. A low cost replacement which uses one third of the power, is more reliable and introduces silent speed control. What are you waiting for?

### About ebm-papst

The ebm-papst Group is Europe’s leading manufacturer of fans and motors and is a pacesetter for the ultra-efficient EC technology. In the last fiscal year 11/12, the company generated turnover of over 1.37 billion EUR.

ebm-papst employs over 11,000 people at 17 production facilities (including Germany, China and the USA) and 57 sales locations worldwide. ebm-papst is represented in many industries, including ventilation, air-conditioning and refrigeration technology, household appliances, heating engineering, IT/telecommunications and industrial engineering.