

Discover ebm-papst *for hotels*

*Optimise hotel operation with energy-efficient
and quiet EC fans for fan coil units*

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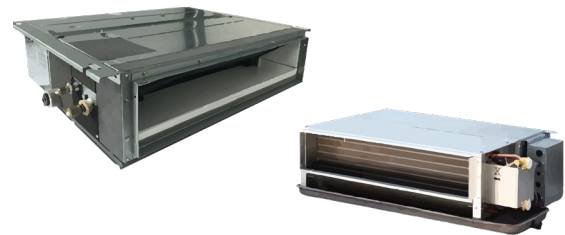


Conventional *Air-Conditioning Systems*

In recent decades, technological advances in transportation naturally led to the rapid expansion of the tourism industry. Demand for accommodation grew accordingly, which in turn led to more new hotels and the upgrade of old ones. In this business, air-conditioning systems within hotel rooms are of particular importance.

How are Hotel Rooms Ventilated?

Fan coil units (FCUs) are the ideal solution for air-conditioning systems in hotel rooms. It consists of a heat exchanger and a blower. It regulates the temperature of the air. Choosing the ideal blower for an FCU is not easy as there are many factors to consider aside from the amount of airflow it can produce. Traditionally, alternating current (AC) blowers are used in FCUs.



Disadvantages of AC Technology



Excessive Noise Production

Overly noisy FCUs with AC technology are among the most frequent reasons why hotel guests complain. Until recently, they have been practically unavoidable due to limited technology in conventional AC blowers.



High Energy Consumption

Did you know: FCUs in hotels are in operation about 100 % of the time. This means that air-conditioning systems are a large cost factor for hotel owners, which then translates to cost for the hotel guest.



Limited Airflow Control

The amount of airflow from the FCU has an impact on the customer's comfort levels. Hence it will be ideal if the hotel guest can have greater control over it. In older FCUs, usually, only three settings (low, mid and high) can be defined by the user.



Cumbersome Maintenance

For a single hotel, there are hundreds of hotel rooms. Occasionally, the FCUs require maintenance. In older FCUs that deploy AC technology, when repair and replacement are required, this involves handling a few separate components. This includes the impeller, housing and motor.

Electronically Commutated (EC) Blower

Compared to AC motors, EC motors are far more efficient and come with several benefits.



1. Housing

- Easy to fit
- Quiet operation
- Flexible installation
- Durable & anti-corrosion

2. Impeller

- Anti-corrosion
- Quiet operation
- Optimised aerodynamics for efficiency
- Available as single, twin & triple blowers

3. EC Motor

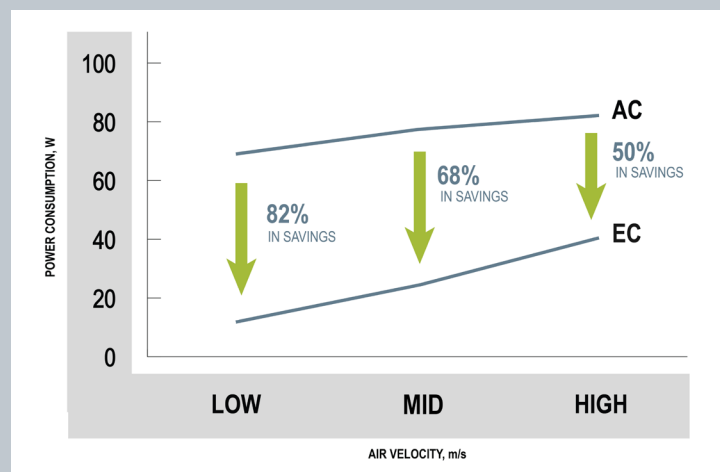
- Low noise emissions
- Active PFC (optional)
- High efficiency range
- Part-load operation (as low as 10%)

4. Electronics

- Universal use
- Variable speed control
- Integrated safety mechanisms
- Integrated system for simple commissioning

Case Study

FCUs in the hotels were retrofitted with ebm-papst's EC blowers. A **noise reduction** of approximately **4dB** was observed, which will be a boon to travel-worn hotel guests. Also, measurements showed that the hotel owner can benefit from **up to 82% in energy savings**. Compared to AC fan systems, **less maintenance** will be required and even when it is necessary, the compact and light design of these fans speeds up the maintenance process.

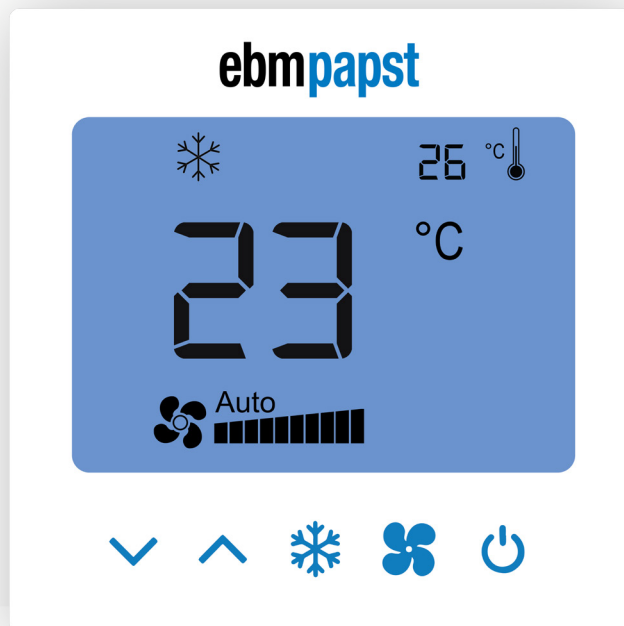


Thermostat for EC Fans

Conventionally, thermostats have three speed ratings available: Low, mid and high. In contrast, ebm-papst's thermostat for EC fans offers more precise airflow control.

Option One: Thermostat (P/N: 230F00602)

The thermostat developed by ebm-papst can define up to 10 different speeds. This provides *increased graded control* and *comfort to hotel guests*.



Features

- 10 or 3-speed control
- 3 types of valves control
- 0-10Vdc fan speed output
- Supply voltage 100V-240Vac
- Changeable 3 speed output voltage
- Dry contact for room card & windows

Thermostat Controls (left to right)

- Decrease speed / temperature
- Increase speed / temperature
- Temperature mode
- Fan speed mode
- Power (On / Off)

To Continue Usage of 3-speed AC Thermostat

Alternatively, hotel owners can choose to use a speed converter if they prefer to continue using their original AC thermostats.

Option Two: 3-Speed Converter (P/N: 230F00579)

For various reasons (e.g. aesthetics), some hotel owners prefer to **continue using the 3-speed AC thermostats** they had installed in their hotel rooms previously. To **resolve the existing 3-speed fan control in AC thermostats**, ebm-papst's 3-speed converter can be used when installing EC fans. Hotel owners can **minimise disruptions to the business** as no extensive renovations will be required.

AC Thermostat



3-Speed Converter



EC Fan



Converter Components

1. 3 Speed thermostat control input
2. 3 Speed EC fan control output
3. AC power input



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