

New Danfoss EC+ concept – ensure optimised system efficiency in your standard ventilation system design

With the Danfoss EC+ concept, the system efficiency in standard ventilation applications is taken to the highest level by using the new control algorithm in the VLT HVAC® Drive for controlling permanent magnet motors (PM motors).

VLT® HVAC Drive controls any PM motor on the market

The well known and proved voltage vector control in VLT® HVAC Drive is now also able to control the PM motors on the market. By using the voltage vector mode in the Danfoss VLT® HVAC Drive, the same dynamic performance and minimised loss is achievable when controlling PM motors as has always been the case with standard induction motors.

Tests have proved efficiencies above 90% from drive input to motor shaft output in a large part of the speed control range, which is a significant improvement and therefore a clear cost optimiser in operation budgets compared to existing induction motor systems.

Compared to other speed controllable high efficiency motor systems, the Danfoss EC+ concept allows the system designer to choose the most efficient single components thereby

ensuring the highest overall system efficiency. In other systems there are often only a few manufacturers and a few components to be used since the design is not IEC standardised. By using Danfoss VLT® HVAC and a PM motor with a shaft in IEC design, any fan wheel can be used. The well known VLT® HVAC Drive control options are still available with a number of field bus options and BMS communication.

We named this flexible solution the “Danfoss EC+ concept”.



The Danfoss EC+ concept

allows PM motors with IEC standard dimensions to be used with Danfoss VLT® frequency converters. Danfoss has integrated the necessary control algorithm in the existing VLT® converter series. This means that there are no changes for the operator. After entering the relevant motor data, the user benefits from the high motor efficiency of EC technology.

Advantages of the EC+ concept

- n Free choice of motor technology: PM or asynchronous with the same frequency converter
- n Device installation and operation remain unchanged
- n Manufacturer independence in the choice of all components
- n Superior system efficiency thanks to a combination of individual components with optimum efficiency
- n Retrofitting of existing systems possible
- n Wide range of rated powers for standard and PM motors