

ENGINEERING  
TOMORROW

*Danfoss*

# Danfoss VLT® Drives

## HVAC Product Overview

**50%**

**Energy savings**

Speed control of fans  
and pumps can lead to  
significant energy savings

[www.danfossdrives.com](http://www.danfossdrives.com)

**VLT**®  
THE REAL DRIVE

# Product Overview

## VLT® HVAC Drive

The VLT® HVAC Drive continues Danfoss leadership in dedicated HVAC features and applications for drives. Advancements in energy monitoring, trending, system maintenance and operation are combined with a modular platform to make the drive easy to operate while feeding back all the operation information you need.

|                   |               |
|-------------------|---------------|
| 200 – 240 V ..... | 1.5 – 60 HP   |
| 380 – 480 V ..... | 1.5 – 1350 HP |
| 525 – 600 V ..... | 1.5 – 1550 HP |

- Built-in DC coils and RFI-filter (optional)
- Bookstyle IP 20/IP 21/NEMA 1/ IP 4X top
- Compact drive IP54/55 and IP66/NEMA 4X
- Integrated/optional communication options
- (Modbus RTU, BACnet, LonWorks and more)
- Multiple PID loops for advanced HVAC control
- Platinum and Nickel temperature sensor inputs
- Application specific menus for quick and easy programming
- Capability for compressor control
- Preventive maintenance scheduling
- Single Phase units available @ 200 V to 30 HP

## VLT® MCD 200 Compact Starter

The VLT® Compact Starter MCD 200 is a compact and cost effective soft starter range for applications where direct-on-line starting is undesirable. MCD 200 is, because of its size and functionality, a good alternative to other reduced voltage starting methods such as star/•

- Versions for 200 – 460 VAC, 10 – 150 HP, max. 200 A
- Voltage ramps or current limit ramp soft-start
- Built-in motor protection
- Compact design with internal bypass system for minimum power loss
- Add-on modules for remote operation and serial communication

## VLT® MCD 500 Soft Starter

VLT® Soft Starter MCD 500 is a total motor starting solution. Current transformers measure motor current and provide feedback for controlled motor ramp profiles. Adaptive Acceleration Control (AAC) automatically employs the best starting and stopping profile for the application.

### Power Range

- 21 – 1600 A, 7.5 – 800 kW
- 1,2 MW inside Delta Connection
- Versions for 200 – 690 VAC

## VLT® 2800 Drive

An extremely compact series of drives designed for side-by-side mounting and developed specifically for the low power market.

|                   |              |
|-------------------|--------------|
| 200 – 240 V ..... | 0.5 – 5 HP   |
| 380 – 480 V ..... | 0.75 – 25 HP |

- Multipurpose
- Side-by-side mounting in any direction
- Built-in PID controller, RFI-filter and DC coils
- Bookstyle IP 20
- Integrated RS 485 interface as standard
- Integrated Profibus or DeviceNet (optional)
- Single phase 200-240 V available

## VLT® Harmonic Mitigation Solutions

PHD and 12/18 pulse harmonic mitigation solutions are available with the following features:

### Package Configurations PHD/Multi-Pulse

- 480 & 600V / 480V
- Up to 650 HP / 300 HP
- -10° to 40° C (14° -104° F) ambient
- NEMA/UL Type 1, 12, and 3R
- Soft Start, 3 Contactor, or no bypass
- PHD Units are OSHPD pre-approved

## VLT® Micro Drive

A compact general purpose drive for AC motors up to 22 kW. It performs perfectly even in complex application set-ups and optimizes energy efficiency and operation.

|                 |             |
|-----------------|-------------|
| 200–240 V ..... | 0.33 – 5 HP |
| 380–480 V ..... | 0.5 – 30 HP |

- Multipurpose
- Process PI-controller
- Automatic Energy Optimizer (AEO)
- Automatic Motor Adaptation (AMA)
- 150% motor torque up to 1 minute
- Smart Logic Controller
- Integrated RS 485 interface as standard with Modbus RTU TYPE
- Single phase 200-240 V available

## VLT® Energy Box Software

VLT® Energy Box software is the most modern, advanced energy calculation tool on the market. It allows energy consumption calculations and comparisons of HVAC fans, pumps, and cooling tower applications driven by Danfoss drives versus alternative methods of control.

VLT® Energy Box software provides a complete financial analysis including:

- Initial cost for the drive system and alternative system
- Installation and hardware costs
- Annual maintenance costs and any utility company incentives for energy conservation products
- Payback time and accumulated savings

VLT® Energy Box software also allows actual energy consumption and duty cycle data to be uploaded from the Drive. This tool makes it easy to evaluate the total savings from converting other types of control systems to a VLT® HVAC Drive.

## VLT® Motion Control Tool MCT 10

For managing drive parameters in systems, the Motion Control Tool MCT 10 is the perfect tool to handle all drive-related data.

The MCT10 offers you:

- Project orientation; one file that contains all parameter settings plus user-defined documents
- Explorer-like view results in a short learning curve
- VLT® Motion Control Tool offers programming of synchronization and positioning in the same environment: one PC tool for all tasks
- Online and offline commissioning
- Support of different interfaces RS485, RS232,USB and Profibus (plus more to come)
- Import of drive setting from Windows and DOS version of Dialog

# What VLT® is all about

Danfoss VLT® Drives is the world leader among dedicated drives providers —and still gaining market share.

## Environmentally responsible

VLT® products are manufactured with respect for the safety and well-being of people and the environment.

All activities are planned and performed taking into account the individual employee, the work environment and the external environment. Production takes place with a minimum of noise, smoke, pollution; and environmentally safe disposal of the products is a design criteria.

## Impact on energy savings

Annual energy savings from production of VLT® drives is equivalent to the energy production from a major power plant.

Better process control, by using VLT® drives, improves product quality and reduces waste and wear on equipment.

## Dedicated to drives

Dedication has been a key word since 1968, when Danfoss introduced the world's first mass produced variable speed drive for AC motors – and named it VLT®.

Twenty five hundred employees develop, manufacture, sell, and service drives and soft starters in more than one hundred countries.

## Intelligent and innovative

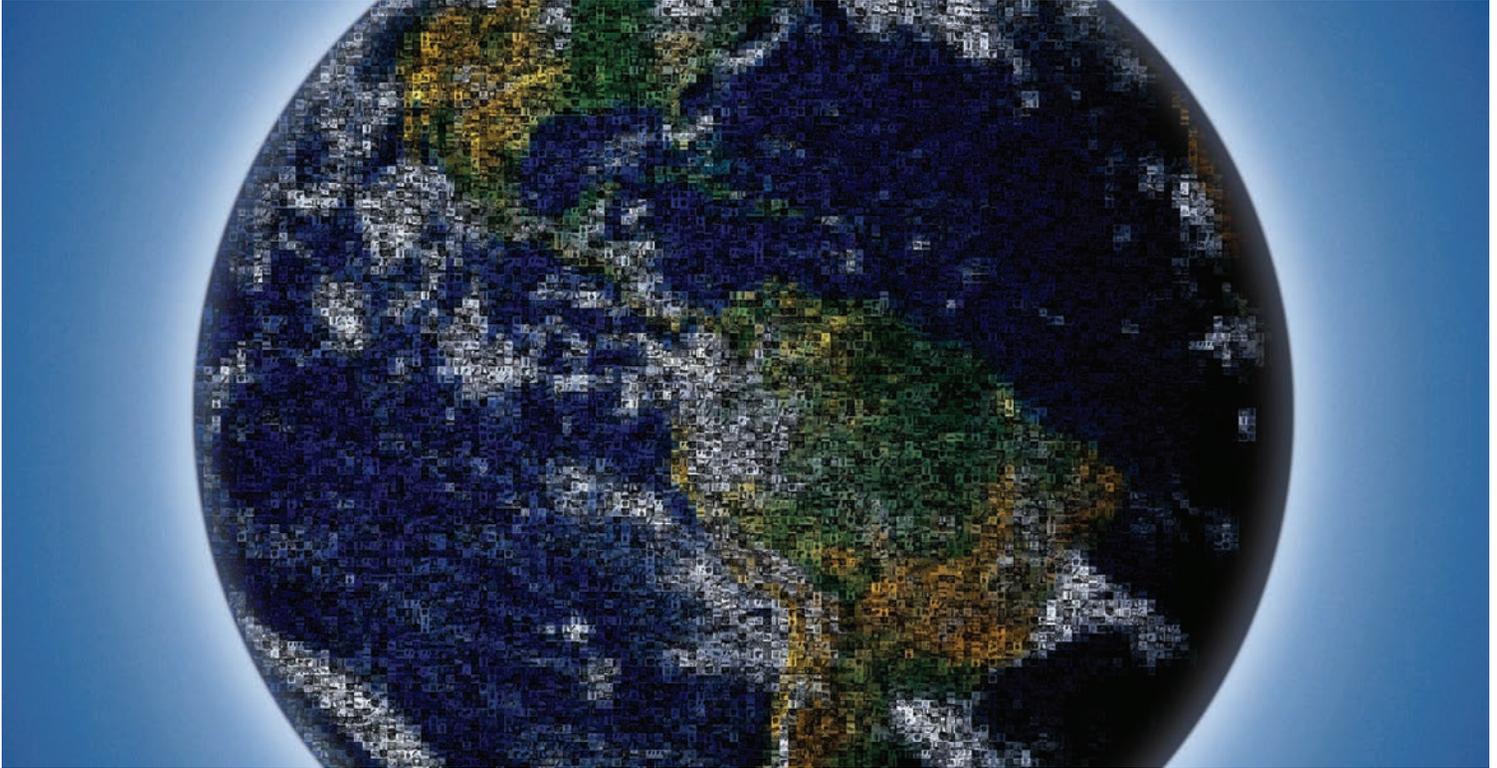
Developers at Danfoss VLT® Drives have fully adopted modular principles in development as well as design, production, and configuration.

Tomorrow's features are developed in parallel using dedicated technology platforms. This allows the development of all elements to take place concurrently across the globe, reducing time to market and ensuring customers always enjoy the benefit of the latest features and enhancements.

## Rely on the experts

We take responsibility for every element of our products. The fact that we develop and produce our own features, hardware, software, power modules, printed circuit boards, and accessories is your guarantee of reliable products. Danfoss VLT® Drive experts don't stop until our customer's challenges are solved.





## EnVisioneering

As a world leader in components and solutions, Danfoss meets our customers' challenges through "EnVisioneering." This approach expresses our views on engineering innovation, energy efficiency, environmental responsibility and sustainable business growth that creates strong customer partnerships. This vision is realized through a global production, sales, and service network focused on refrigeration, air conditioning, heating and water, and motion control. Through EnVisioneering, Danfoss is Making Modern Living Possible.

Danfoss "EnVisioneering":

Engineered solutions to improve performance and profitability

Energy efficiency to meet higher standards and to lower operating costs

Environmental sustainability to provide a financial and social payback

Engaged partnerships to foster trust, reliability, and technological superiority

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### Danfoss VLT Drives

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