

Frequency converter

Danfoss VLT® AQUA Drive FC 202 – for pumps, fans and cooling applications



VLT® AQUA Drive builds on Danfoss's new modular plug-and-play platform, and is perfect for facilities within water supply, wastewater and fish farms. Danfoss has extensive experience in pumping operations, which gives optimal qualities for VLT Drive. A wide range of optional cards are available, so that VLT® AQUA Drive can be adapted to your needs.

- Display options:
The remote-mounting kit allows placement of the local control panel at a distance of up to 3 m from the converter.
- 24 V supply card:
Connection of an external 24 V supply to the control card keeps the converter 'awake' even if the main power supply is turned off.
- Power options:
VLT® Low Harmonic Drive
VLT® Advanced Active Filter
VLT® Advanced Harmonic Filter
VLT® dU/dt filter
VLT® Sine wave filter (LC filter)

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FUNCTIONS AND BENEFITS

FIELD BUS COMMUNICATION

Standard built in:

FC Protocol

Modbus RTU

Otional:

VLT® PROFIBUS DP V1 MCA 101

VLT® DeviceNet MCA 104

VLT® PROFINET MCA 120

VLT® EthernNet/IP MCA 121

VLT® Modbus TCP MCA 122

Output ranges

200–240 V 1.1 kW – 45 kW

380–480 V 0.37 kW – 1,000 kW

525–600 V 0.75 kW – 90 kW

525–690 V 11 kW – 1.4 MW

Protection rating

IP20

IP21/NEMA 1

IP55/NEMA 12

IP66/NEMA 4X

Automatic tuning of the PI regulator

By running 'autotuning' of the PI regulator, the converter 'learns' how the system responds to changes and is tuned to these responses. This ensures quick, accurate and stable regulation.

Automatic energy optimisation (AEO)

The standard AEO function optimises the magnetisation of the motor at all speeds and loads. This increases energy efficiency by 5–15% at partial loads.

Energy monitoring

VLT® AQUA Drive provides a complete overview of energy consumption, so that inefficient components in the system can be easily identified.

Automatic resonance monitoring

The frequency converter can easily be configured to avoid frequency ranges in which connected fans generate resonance. This reduces the installation time and system wear.

Pipe-filling function

Enables control of pipe filling, whether vertical or horizontal. Prevents kicks, pipe breakage and valve failure.

Registers operation outside the pump curve, pipe breakage and leakages

The converter registers pipe breakages and leakages. If operation is not in accordance with the pump curve an alarm is activated and the system is shut down or pre-programmed responses are initiated.

A dry operation sensor reduces maintenance costs

VLT® AQUA Drive monitors the condition of the pump by comparing the relationship between internal frequency and power consumption. In the case of discrepancies, an alarm is sounded or the system is shut down.

Standard cascade control

Built-in cascade control can regulate up to three pumps/compressors.

Motor alternation

The built-in logic control unit ensures alternating pump operation, between two operating pumps and one redundant pump. Alternating redundancy prevents the system from sticking. An internal timer ensures that the motors operate for equal periods of time.

Flow compensation

The flow compensation system regulates the set point according to the flow. This saves energy and prevents unnecessary overpressure.

Quick start

Enables quick acceleration to minimum speed, after which the normal ramp time takes over. This prevents unnecessary wear on the bearings.

Fail safe

VLT® AQUA Drive can be delivered with a fail-safe function, suitable for category 3 installation in accordance with EN 954-1. This function prevents the converter from starting unintentionally.

The frequency converter comes with a simplified set of user instructions posted next to the display/panel to facilitate easy and quick operation.

