

Fact Sheet

# VLT® AQUA Drive **SmartStart** improve efficiency with minimal effort



Reduce Start-up complexity using the SmartStart feature found in Danfoss VLT® AQUA Drives.

As water and wastewater applications continue to grow in size and complexity, system commissioning can become a time consuming and difficult task. Using the new SmartStart wizard found in Danfoss VLT® AQUA Drives helps make it easier and faster to commission your drive.

The SmartStart feature is found in software versions 2.04 or newer and is activated upon initial power-up or following a factory reset. SmartStart can also be initiated directly via the Quick Menu. Settings are selected on the drive's 28 language graphical control panel.

### 10 Simple Steps to Optimized Commissioning

The set-up wizard guides users through a series of 10 simple steps to ensure accurate and efficient motor control.

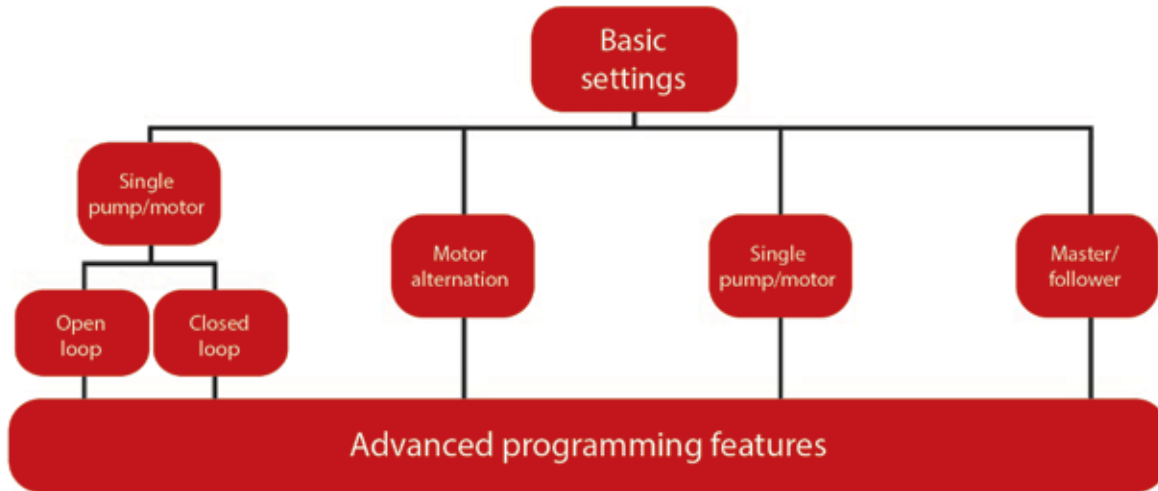
- **Single pump/motor:** Select operation in either an open or closed loop configuration.
- **Motor alternation:** Used when two pumps/motors are required to share one drive.
- **Basic cascade control:** Provides speed control of a single pump/motor in a multi-pump system. This is an attractive solution when using booster sets.
- **Master-follower:** Ability to control up to eight pumps/motors to ensure optimal operation of the overall pump control system.
- **Flow compensation:** The drive will adapt the pump/motor operation in relation to a user-selected flow set point.
- **Deragging:** This proactive feature helps avoid damage to the pump by reversing the direction of the flow in user-selected flow cycles, thereby helping to remove clogs from the pump impellers.
- **Pipe Fill:** Ensures that the pipes are filled gradually to avoid water hammer.
- **Dry run/end of curve detection:** Will protect the pump from damage by ensuring that the set point is reached. If not, the drive will assume that the pipe is dry or there is excessive leakage and alert the operator.
- **Sleep mode:** Continuously monitors the system and shuts down the pump when there is no demand, helping to reduce energy consumption.
- **Special ramps:** Used when specific application parameters require a dedicated start or stop ramp time.

## Perfect

tool for:

- Reduce start-up complexity
- Easier/faster drive commissioning
- Improved process efficiency

Feature	Benefit
Quick set-up	- Save time and money
Step-by-step guidance through settings	- Easier/faster drive commissioning
Asks questions relevant to water, wastewater, and irrigation applications	- Improved process efficiency



### Enhanced energy optimization

To help achieve optimum energy efficiency, SmartStart allows the user to select the Automatic Motor Adaptation (AMA) feature within the drive. This feature streamlines installation by automatically tuning the drive to the motor without spinning it or requiring the load to be decoupled.

The VLT® AQUA Drive is a dedicated drive for water and wastewater applications. Available in a power range from 1/3 – 1500 HP in all common voltage ranges, including 690 V, the drive can control all relevant motor technologies, including permanent magnet motors. For additional flexibility the drive can be expanded with a wide range of performance enhancing features that improve operation and energy efficiency.

### Enclosure ratings

- Available in Chassis, NEMA 1, NEMA 12, NEMA 3R, and NEMA 4X rated enclosures designed either for mounting in existing panels or as standalone units

### Available options

- Modular application options:** plug-and-play cards facilitate drive upgrades, startup and servicing
- Advanced Harmonic Filters:** reduce harmonic distortion in sensitive applications
- dV/dt filters:** additional protection for motor insulation.
- Sine filters (LC filters):** reduce motor noise

### PC software tools

- MCT 10:** provides powerful functionality for commissioning and servicing drives
- VLT® Energy Box:** comprehensive energy analysis tool
- MCT 31:** harmonics calculation tool



## VLT | VAGON

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