ENGINEERING TOMORROW

Fact Sheet

NEMA 3R Rated VLT® AQUA Drive

The VLT® AQUA Drive withstands outdoor environments. A NEMA/UL Type 3R rated enclosure, and standard 1,000-foot motor cable runs, provide maximum mounting flexibility.

Power range:

- 1-phase, 200–240 VAC: 1.5–30 HP
- 1-phase, 380–480 VAC: 10–50 HP
- 3-phase, 200–240 VAC: 1/3–60 HP
- 3-phase, 380–480 VAC: 1/2–450 HP
- 3-phase, 525–690 VAC: 15–400 HP

Perfect

tool for: lift stations, pump stations, golf courses, irrigation, and other outdoor applications

Suitable for installations that require protection against rain or splashing water, NEMA/UL Type 3R rated variable frequency drives can be installed directly at the equipment location without an additional protective enclosure. The variable frequency drive is built with all cast aluminum parts so that the enclosure will not rust.

Phase Conversion

For remote areas such as lift stations or farming fields where 3-phase power is not available, single-phase drives offer phase conversion and speed control in a single, compact package. Phase-converting VLT® AQUA Drives enable the use of cost-effective three-phase motors with only single-phase, 240 VAC or 480 VAC service.

Feature	Benefit
SmartStart programming	Quick and easy start-up
All cast aluminium parts	No need for separate cover or enclosure*
Conformal coated circuit board option	Additional protection in corrosive environments
Info key opens on board manual	No manual needed to operate
Initial Ramp	Performance that matches pump demands
Fan designed to withstand moisture and rain	Reliable operation
Flow compensation	Improved setpoint control
End of pump curve detection	Protects pump, detects leakag
No/low flow detection	Pump protection
Pipe fill mode	Eliminates water hammer
Can be installed near the motor or blower	Facilitates modular plant design
1000' motor cable runs (unshielded)	Short motor cables reduce EMI/RFI
Reliable	**Maximum uptime**
Robust, single enclosure	Reduced cost and maintenance
Unique cooling concept with no ambient air flow through electronics housing	Reliable operation in harsh environments
Max. ambient temp. 50° C without derating	No external cooling or oversizing necessary
User friendly	**Simplified operation and lower costs**
Award-winning LCP keypad design	Reduced space requirements and commissioning time
Easy installation	Lower startup costs
Watertight USB plug can be mounted in the bottom of the drive	Drive enclosure can remain closed while making setup or programming changes

** For outdoor installations: The drive must be installed under a suitable cover with weather shield to protect from direct exposure to sun, snow and ice.*

ENGINEERING
TOMORROW

Outdoor weather shield

Mount above FC 202 to protect from direct sun and falling debris.

Stainless steel back plate

For panel or wall mounting, a stainless steel back plate is available to direct air from the fan through the rear heatsink.

Watertight USB plug

A USB plug can be mounted in the bottom of the enclosure, allowing the drive to stay closed while making setup or programming changes using MCT 10 setup software.

Mains supply (L1, L2, L3)	
Supply voltage	200–240 V ±10%, 380–480 V ±10%, 525–690 V ±10%
Supply frequency	50/60 Hz
Displacement Power Factor (cos φ) near unity	(> 0.98)
Switching on input supply L1, L2, L3	1–2 times/min.
Output data (U, V, W)	
Output voltage	0-100% of supply
Switching on output	Unlimited
Ramp times	1–3600 sec.
Closed loop	0–132 Hz
Digital inputs/outputs	
Programmable digital inputs (standard)	6 (two can be used as digital outputs)
Logic	PNP or NPN
Voltage level	0–24 VDC
Analog inputs	
Analog inputs (standard)	2
Modes	Voltage or current
Voltage level	0 to +10 V (scaleable)
Current level	0/4 to 20 mA (scaleable)
Pulse inputs	
Programmable pulse inputs (standard)	2 (two of the digital inputs can be used as pulse inputs)
Voltage level	0–24V DC (PNP positive logic)
Pulse input accuracy	(0.1–110 kHz)
Analog outputs	
Programmable analog outputs (standard)	1
Current range at analog output	0/4-20 mA
Relay outputs	
Programmable relay outputs (standard)	2 (240 VAC, 2 A and 400 VAC, 2 A)
External DC supply	
External 24V DC supply card (option)	Provides backup power for control and option cards
Fieldbus communication	
FC Protocol and Modbus RTU built in. DeviceNet, Profibus Profinet, Ethernet IP, & Modbus TCP modules optional	
Ambient temperature	
Minimum 32° F (0° C), Maximum 122° F (50° C)	

PC software tools

- MCT 10: ideal for starting up and servicing the drive
- MCT 31: harmonics calculations tool

VLT | VACON

Tel. +1 (888) DANFOSS | www.danfossdrives.com | E-mail: salesinformation@danfoss.com
Danfoss Drives: Houston, TX • Loves Park, IL • Milwaukee, WI • Raleigh, NC • Stoney Creek, ON