

ABB water/wastewater drives ACQ550, 1 to 550 HP



A reliable system is critical to protecting, supplying and recycling water. What you choose matters. The world trusts you to make good decisions and you take that responsibility seriously. We'll help safeguard your system to run efficiently and provide the value and dependability you demand.



Power and productivity
for a better world™



System reliability, pump efficiency and a suite of industry-specific controls enable you to successfully maintain a reliable water cycle management system.

With this in mind, we designed our variable speed AC drives specifically for Water/Wastewater environments and applications. These devices are available, as standard, for panel-mounting or factory direct NEMA-1, drip-proof NEMA-12 or outdoor-rated NEMA-3R enclosures.

A water industry start-up assistant resides within the intuitive, full graphic display panel to aid in commissioning submersible, centrifugal or positive displacement pumps. This control panel can also be mounted remotely, or on the cover of the drive, and used to upload, store and download parameters in multiple drive setups.

Application control

The extensive library of pre-programmed, water-specific application macros allows rapid configuration of inputs, outputs, and parameters to maximize convenience and minimize start-up time. To simplify

troubleshooting, the drive uses a real-time clock, which allows for accurate time stamps on faults, resets and more. Two integral option slots, that can be configured for additional relay outputs (i.e. drive status indications, timed or pump staging applications) or a variety of different communication bus adapters, are at your disposal.

Cost savings

We designed our solutions to give you the most flexible motor control performance through two standard modes: Scalar (V/Hz) for typical pumps and Sensorless Vector for the more demanding applications. Through either of these, you will have accurate speed control of any standard induction motor.

Save energy by applying variable electronic speed control to your pumps and pumping systems. These savings can be achieved over bypass or valve-operated flow control, traditional diesel driven systems or across the line operations. The Affinity Laws of physics define the relationship between pumps and the power they require. On centrifugal

pump applications, the power requirement of the pump varies by the cube of the speed. Electronically reducing the pump speed by 20% will typically cut energy costs in half.

Designed for water

The ACQ550 - which ranges from 1 to 550 HP - is well-suited to meet your needs, from the simplest pumping applications, through the most demanding.



ACQ550-PHPB01U-EN REV B 10/15/2013

Technical data

ACQ550 standard drives	
ACQ550-U1 wall mount	
Available enclosures	NEMA 1 & 12 Enclosures for 1.5 - 200 Hp
ACQ550-CC bypass	
Available enclosures	NEMA 1, 12 and 3R Enclosures for 1.5 - 200 Hp NEMA 1 & 12 Free Standing for 250 - 400 Hp
Main input disconnect	Two Contactor Bypass with circuit breaker disconnect (CC)
ACQ550-PC/PD with circuit breaker or disconnect	
Available enclosures	NEMA 1 for 1.5 - 400 Hp, NEMA 12 for 1.5 - 550 Hp, NEMA 3R for 1.5 - 200 Hp Enclosures
Main input disconnect	Circuit Breaker (PC) Fused Disconnect (PD)
Input power connection	
Voltage and power range	3-phase, 208 to 240 V, +10/-15%, 1 - 100 Hp 3-phase, 380 to 480 V, +10/-15%, 1 - 550 Hp 3-phase, 500 to 600 V, +10/-15%, 1.5 - 150 Hp
Frequency	48 to 63 Hz
Power factor	0.98
Programmable control connection	
Two analog inputs	
Voltage signal	0 (2) to 10 V, Rin > 250 kΩ single-ended
Current signal	0 (4) to 20 mA, Rin = 100 Ω single-ended
Potentiometer reference value	10 V ±1% max. 1 kΩ to 10 kΩ
Two analog outputs	
Auxiliary voltage	24 V DC ±10%, max. 250 mA (short circuit protected)
Six digital inputs	12 to 24 V DC with internal or external supply, PNP and NPN
Three relay outputs	
Maximum switching capacity	8 A/24 VDC or 250 VAC; 0.4 A/120 VDC
Maximum continuous	I _c = 2 A RMS
Environmental limits	
Protection class	UL Type 1, 12 or 3R (NEMA 1, NEMA 12, NEMA 3R) -5 to 40°C (5 to 104°F)
Ambient temperature	40 to 50°C (104 to 122°F) No frost allowed fswitch 4 kHz, PN and I2 derated to 90%
Relative humidity	Lower than 95% (without condensation)

Option modules	
	DeviceNet PROFIBUS-DP ControlNet
Fieldbus adapters	
	CANopen Ethernet (EIP,MB/TCP,PROFINET) EtherCat adapter PROFINET IO Panel mounting kits Relay output extension module Flange mounting kits
Additional modules	
Output (motor) connection	
Frequency	Frequency 0 to 500 Hz
Acceleration time	0.1 to 1800 s
Deceleration time	0.1 to 1800 s
Serial communication built in as standard	
Embedded building automation protocols	
	RS 485 Modbus RTU protocol UL, cUL, CSA, CE, C-TICK, and GOST-R approvals Low Voltage Directive 73/23/EEC with supplements
Product compliance	
240 V, 480 V, 600 V products	Machinery Directive 98/37/EC EMC Directive 89/336/EEC with supplements Quality assurance system ISO 9001 and Environmental system ISO 140001

For more information please contact your local ABB representative or visit:

www.abb.com/drives
www.abb.com/water

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