Ultra-low harmonic drives for water and wastewater
5 to 400 hp

The ACQ580 ultra-low harmonic (ULH) drive provides an unprecedented compact design that delivers unity power factor with a 3% or less THDi. By meeting the most stringent requirements of the IEEE519 recommendations, the ACQ580 ULH drive reduces any risk of electrical disturbance when operating on a back-up generator.

Secure the flow of water and wastewater
The ACQ580 variable frequency drive (VFDs) delivers innovative pumping features for the water and wastewater industry. The Primary Setting menu and assistants simplify commissioning, setup as well as daily control. Embedded water and wastewater application features enhance the performance of the system.

Speak the language
Leveraging clear, water industry terminology, the control panel enables operators to efficiently interface with the drives in terms they use every day. The optional blue tooth control panel allows for wireless commissioning and monitoring.

Feel the Power
ACQ580 drives are designed for customers who value reliability, high quality, and robustness in their applications. With embedded pump functionality, the ACQ580 keeps the pump system operating optimally and efficiently. Product features, such as coated boards and optional compact UL Type 12 enclosure, make the ACQ580 suitable for harsh conditions.
### Technical data

**Power range**
5 to 400 hp (frame sizes R3, R6, R8, R11)

**Voltage range**
3-phase, UN₂ = 380 to 480 V, +10%/-15%

**Power factor (cosφ) at nominal load**
1.0

**Efficiency at rated power**
96.5%

**Power loss**
Approx. 2-3% of rated power

**Frequency**
50/60 Hz ±5%

**Supported motor control**
Scalar and vector

**Supported motor types**
Asynchronous motor, permanent magnet motor (vector), SynRM (vector)

**Degree of protection**
- ACQ580-31: UL Type 1 (IP21) as standard
  - UL Type 12 (IP55) as option
- ACQ580-34: UL Type 00 (IP00)

**Ambient conditions**
- ACQ580-31: -15°C to 40°C. No frost allowed.
  - From +40°C to +50°C with derating 1% per 1°C
- ACQ580-34: -15°C to 40°C. No frost allowed.
  - From +40°C to +50°C with derating 1% per 1°C

**Compliance**
CE, UL, cUL, EAC, RCM

**Harmonic performance**
Harmonics are below the limits defined in IEEE519

**Control connections**
Two analog inputs, two analog outputs, six digital inputs including thermistor input, three relay outputs, EIA-485 Modbus RTU, safe torque off (STO), external 24 V DC supply input, USB via control panel

**Optional I/O extension modules**
- CMOD-01: External 24 V DC/AC and digital I/O extension
  - (2 x relay output and 1 x digital output)
- CMOD-02: External 24 V and isolated PTC interface
  - CHDI-01: six 115/230V AC digital inputs and two relay outputs

**Optional communication extension modules**
EtherNet/IP
- Modbus TCP
- Profibus-DP
- Profinet
- DeviceNet

**PC tools**
Drive composer tool entry, available for free via ABB website
Drive composer tool pro

**Control panel options**
Hand-Off-Auto control panel (ACH-AP-H) as standard delivery
Hand-Off-Auto control panel with bluetooth (ACH-AP-W)
Assistant control panel (ACS-AP-I)
Control panels feature battery back-up

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### Suitable for many applications like:

- For all water industry applications
  - For pumps, blowers and mixers

- For various installation needs
  - From wall-mounted (-31) to drive modules (-34)

- Ensures high enclosure class
  - UL Type 1 (IP21)
  - UL Type 12 (IP55)

- Connects virtually to any kind of motor
  - From induction and permanent magnet motors to synchronous reluctance motors

- Offers built-in pump functionalities
  - Intelligent multi-pump control
  - Sensorless flow calculation
  - Level control
  - Soft pipe fill
  - Quick ramps
  - Pump cleaning
  - Dry pump protection

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### There is more to this drive

**Programmable**
The Drive composer PC tool offers extensive drive monitoring and process tuning.

Adaptive programming provides extra flexibility by offering an easy alternative for simple programming needs.