

ACQ580 LV AC DRIVES

Drive modules for water and wastewater

400 to 700 Hp



The ACQ580-04 is the latest addition to the ABB drives for water and wastewater portfolio. This modular design allows for easy integration into any enclosure and comes standard with EMC and common mode filters.

As with all drives in the ACQ580 portfolio, it includes innovative pumping features designed for water and wastewater applications.

Connection to power and motors is simple. Programming using the Primary Setting menu and assistants simplifies commissioning, setup and daily control. Embedded water and wastewater application features create an intuitive environment for users and dedicated pumping features enhance the performance of the pumping system.

Secure the flow

The ACQ580 variable frequency drive (VFD) delivers innovative pumping features for the water and wastewater industry. Primary Setting menu and assistants simplifies commissioning, setup and daily control. Embedded water and wastewater application features create an intuitive environment for users and dedicated pumping features enhance the performance of the pumping 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 Bluetooth control panel allows for wireless commissioning and monitoring.

Feel the power

ACQ580 drives are designed for customers who value reliability, high quality, and robustness. With embedded pump functionality, the ACQ580 keeps the pump system operating optimally and efficiently.

All ACQ580 drives are current rated devices. The HP ratings provided are for reference only and are based on typical 4-pole motors at nominal voltages (NEC Table 430.250). If full motor torque is required, ensure the drive has a continuous current rating equal to, or greater than the full load amp rating of the motor.

The ACQ580 is available in both normal and heavy-duty ratings. Normal duty ratings provide a 110% short term overload rating for one minute every ten minutes. Heavy duty ratings provide a 150% short term overload rating for one minute every ten minutes. All ACQ580 drives and their protective functions are thoroughly tested for optimal performance.

Technical data

Power range	400 to 700Hp, 460V
Voltage range	440-480 V, 3-phase input, 3-phase output
Power factor (cosφ) at nominal load	0.98
Efficiency at rated power	98%
Power loss	Approximately 2-3% of rated power
Frequency	0 to 500 Hz
Supported motor control	Scalar and vector
Mains choke	AC choke, 3% nominal impedance
Supported motor types	Asynchronous motor, permanent magnet motor (vector), SynRM (vector)
Degree of protection	UL (NEMA) Type Open / IP00
Ambient conditions	-15 to +40 °C (5 to 104 °F) 50°C (122°F) available with derate 0 to -15 °C (32 to 5 °F) No Frost Allowed Output derated above +40°C (104°F)
Compliance	CE, UL, cUL, CSA, EAC
Harmonic mitigation	According to IEC 61000-3-12: 2011
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

Control and communication options

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 CAIO-01: Analog I/O extension (3x AI bipolar and 2x AO unipolar)
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) Control panel - Optional Both control panels feature battery back-up

Control Panel, Control Panel Holder and remote mountable control section included.



ABB Inc
Drives
16250 W. Glendale Drive
New Berlin, WI 53151

abb.com/drives

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Typical applications

- Pumps
- Blowers
- Mixers

Installation type

- Modular
 - IP00 open power chassis
 - Remote mountable control section

Standard main features include

- Easy installation, commissioning and maintenance with pedestal on wheels and ramp
- Coated circuit boards
- Integrated safety features including Safe Torque Off (STO)
- Extensive programmable digital and analog inputs and outputs

Built-in pump functionality

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

Optional

- Wireless Bluetooth control panel

Motor types

- Induction motors
- Permanent magnet motors
- Synchronous reluctance motors

Programmability

- The Drive Composer PC tool provides extensive drive monitoring and process tuning.
- Adaptive programming provides extra flexibility by offering an easy alternative for simple programming needs.