

ACQ580 LV AC DRIVES

Drives for water and wastewater

1 to 350 hp



The ACQ580 is the latest addition to the ABB drives portfolio. This robust, compact and energy efficient drive is designed for securing the flow of water and wastewater in your pumping system.

The drive is available in power ranges from 1 to 150 HP at 230V, 1 to 350 HP at 460V, and 2 to 250 HP at 575V. It is available in UL Type (NEMA) 1 and 12 enclosures.

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. Product features, such as coated boards and optional compact UL Type 12 enclosures, make the ACQ580 suitable for harsh conditions.

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	0.5 to 75 hp, 230 V, Single Phase 1 to 150 hp, 208/230 V 1 to 350 hp, 460 V 2 to 250 hp, 575 V
Voltage range	240 V, 1-phase input, 3-phase output 208-240 V, 3-phase input, 3-phase output 440-480 V, 3-phase input, 3-phase output 525-600 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	50/60 Hz ±5%
Supported motor control	Scalar and vector
Supported motor types	Asynchronous motor, permanent magnet motor (vector), SynRM (vector)
Mains choke	DC choke, 5% equivalent impedance
Degree of protection	UL (NEMA) Type 1 / IP 21, as standard UL (NEMA) Type 12 / IP55, as option
Ambient conditions	-15°C to 40°C. No frost allowed. From +40°C to +50°C with derating 1% per 1°C
Compliance	UL, cUL, CE, CSA, EAC, RCM, Ecodesign EU 2019/1781
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

Control panel options	Hand-Off-Auto control panel with bluetooth
Optional communication extension modules	EtherNet/IP Modbus TCP Profibus-DP ProfiNet DeviceNet
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)
PC tools and programmability	Drive composer tool entry, available for free via ABB website Drive composer tool pro

Typical applications

- Pumps
- Blowers
- Mixers

Installation type

- Wall-mounted

High enclosure class

- UL (NEMA) Type 1 / IP21
- UL (NEMA) Type 12 / IP55

Built-in pump functionality

- Intelligent multi-pump control
- Pump cleaning
- Level control
- Sensorless flow calculations
- Min/max flow and pressure protection
- Dry pump protection
- Quick ramps
- Cavitation Detection and Control
- Soft pipe filling
- Motor disconnect detection
- Communication fail functionality
- Adaptive programming
- Start-up assistants
- Diagnostic assistant
- Sleep boost
- Auto change
- Two independent adjustable accel/decel ramp
- Motor preheating
- PID control with PID sleep / wake-up
- Dry run protection
- Pressure protection
 - Inlet pressure protection
 - Maximum pressure protection
 - Minimum pressure protection
- Energy optimizer and calculator
- Load profile

Standard Hand/Off/Auto Control Panel:

- Primary Settings menu to ease drive startup
- Real Time Clock
- Diagnostic and Maintenance functions
- Full Graphic Display, including Chart, Graph, Meter options
- 21 editable home views
- USB interface for PC and tool connection
- Parameters are Alpha-numeric
- Back-up and Restore function built into panel
- Automatic back-up after parameter change