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
1 to 75 hp, 230 V, Single Phase
1 to 150 hp, 208-240 V
1 to 350 hp, 440-480 V
2 to 250 hp, 525-600 V

### Voltage range
230 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
Built-in swinging choke as standard

### 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
CMOD-02: External 24 V and isolated PTC interface
CHDI-01: six 115/230V AC digital inputs and two relay outputs

#### 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