ACQ580 LV AC DRIVES

ACQ580 packaged drive with disconnect for water and wastewater
1 to 60 hp

The ACQ580 Drive with integrated disconnect is the latest addition to the ABB drives portfolio. This robust, rugged, and compact package enables mounting within line of site of equipment as well as an additional means for lockout tagout.

This drive is offered with either an input disconnect (ACQ580-PD) or an input circuit breaker (ACQ580-PC). Both include drive fuses and are available in power ranges from 1 to 25 HP at 208/230V, 1 to 60 HP at 460V, and 2 to 30 HP at 575V. It is available in UL Type (NEMA) 1 and 12 enclosures and delivers innovative pumping features 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 with dedicated pumping features that 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. 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

<table>
<thead>
<tr>
<th>Power range</th>
<th>1 to 60 hp (frame sizes R1-R4)</th>
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</thead>
<tbody>
<tr>
<td>Voltage range</td>
<td>ACQ580-01-xxxxA-2 208-240 V 440-480 V 525-600 V</td>
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<tr>
<td>Efficiency at rated power</td>
<td>98%</td>
</tr>
<tr>
<td>Power factor (cosφ) at nominal load</td>
<td>0.98</td>
</tr>
<tr>
<td>Frequency</td>
<td>50/60 Hz ±5%</td>
</tr>
<tr>
<td>Supported motor control</td>
<td>Scalar and vector</td>
</tr>
<tr>
<td>Supported motor types</td>
<td>Asynchronous motor, permanent magnet motor (vector), SynRM (vector)</td>
</tr>
<tr>
<td>Mains choke</td>
<td>Built-in swinging choke as standard</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>UL (NEMA) Type 1 &amp; 12 IP21, IP55</td>
</tr>
<tr>
<td>Ambient conditions</td>
<td>-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)</td>
</tr>
<tr>
<td>Compliance</td>
<td>UL, cUL, CSA and EAC approvals</td>
</tr>
<tr>
<td>Harmonic mitigation</td>
<td>According to IEC 61000-3-12: 2011</td>
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<tr>
<td>Control connections</td>
<td>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</td>
</tr>
</tbody>
</table>

### 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

**Optional communication extension modules**
- DeviceNet
- EtherNet/IP
- Modbus TCP
- PROFINET
- PROFIBUS-DP

**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

### Typical applications
- Pumps
- Blowers
- Mixers

### Installation type
- Wall-mounted (-01)

### High enclosure class
- UL (NEMA) Type 1 / IP21
- UL (NEMA) Type 12 / IP55

### Motor types
- Induction motors
- Permanent magnet motors
- Synchronous reluctance motors

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

### 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.