Water & wastewater drives
ACQ580
ABB water & wastewater drives

Overview

W&WW drives – ACQ580 family

Key features

Secure the flow of water and wastewater
The ACQ580 variable frequency drives (VFDs) deliver innovative pumping features for the water and wastewater industry. The primary settings menu and assistants simplify commissioning, setup, and daily control. Embedded water and wastewater application features enhance the system’s performance.

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-enabled control panel allows for wireless commissioning and monitoring.

Designed with reliability in mind
ACQ580 drives are designed for customers who value reliability, high quality, and robustness in their applications. With built-in 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.

Wall-mount drive – ACQ580-01

Key features

- UL(NEMA) Type 1, 12 enclosure
- NEMA 12 footprint same as NEMA 1
- SCCR rating: 100kA with fuses
- DC Swinging Choke technology to mitigate harmonics
- EMC C2 filters for 1st environment installations
- Coated printed circuit boards
- Customer password lock

Main benefits

- Tailored for W&WW applications
- Easy to configure for all application types
- Optimal energy usage based on process demand
- Balanced operation time to increase the mean time between repairs
- Functionality reduces wear on the mechanical parts in submersible pumps

Packaged drive – ACQ580-Px

Key features

- Packaged with input disconnect switch or circuit breaker
- UL(NEMA) Type 1, 12, 3R enclosure

Main benefits

- Turnkey enclosed solutions (3 wires in/out)
With pump control software, one drive controls several pumps or blowers in parallel and eliminates the need for an external programmable logic controller. This results in reduced stress on the mains and the system, as well as in lower maintenance and operation costs.

Start-up assistant allows first-time users to quickly customize the drive, out of the box, according to their needs. This is complemented by a built-in help function to make parameter-by-parameter setting easy.

Enjoy sophisticated process control in scalar and vector control modes. They support a wide range of motors including induction, permanent magnet and synchronous reluctance motors.

The energy optimizer feature operates both in scalar and vector control modes, ensuring maximum torque per ampere and reducing energy drawn from the supply. You can follow the saved energy, CO2 emissions or money, and see how fast the drive brings you a return on investment.

The drive reduces motor noise by spreading the switching frequencies over a user-specified range. A higher switching frequency reduces motor noise at low load without limiting full current at maximum load.

Diagnostic assistant helps in locating the cause of any disturbance to the drive and even suggests possible remedies. This reduces process downtime by making repairs or adjustments effortless.

A built-in and stand-alone process PID/loop controller makes the drive a self-governing unit that requires no external logic input from the control room but requires only an external process measurement.

Load profile feature collects drive values, such as current, and stores them in a log. This enables you to analyze and optimize the application with the help of historical data load.

Adaptive programming provides extra flexibility by offering a built-in programmable logic controller (PLC).
## Drive electrical ratings

### Light duty

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<td>460 V</td>
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<td>03A0</td>
<td>03A5</td>
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</table>

### Ratings

- Ratings are according to the standard UL (NEC) table, please check with local ABB representative for specific sizing requirements.
- **cULus certification only.**
### Energy Efficiency

**Operational efficiency**

Know where to look...

Pumps (14%) and aerators (53%) are the largest wastewater energy consumers. Because of catchment area characteristics, pumps are often over-sized. Furthermore, overall electrical system efficiency comprising transformers can be up to 20 percent less efficient through poor design.

### Wastewater

**Productivity and resilience**

Built-in resilience...

Wastewater plants need to run without interruption and in the most efficient and environmentally-conscious way.

Ensuring the reliability of plant assets is the best way to reduce supply interruptions, lower environmental impact and keep your business efficient and effective.

### Pumping Station

**Operation and maintenance**

Lower operational overheads...

Wastewater pumps suffer a higher wear rate because of grit, rags, debris and other solids. Managing these issues saves energy by avoiding pumping against partial blockages.

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### Option compatibility

<table>
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<tr>
<th>Construction</th>
<th>Option code</th>
<th>Description</th>
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<tbody>
<tr>
<td>O1 PD PC</td>
<td>UL (NEMA) 1</td>
<td>Indoor use primarily to provide a degree of protection against limited amounts of falling dirt.</td>
</tr>
<tr>
<td>O1 PD PC</td>
<td>UL (NEMA) 12</td>
<td>Indoor use primarily to provide a degree of protection against circulating dust, falling dirt and dripping non-corrosive liquids. Does not protect against contamination from salt-laden air.</td>
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<tr>
<td>O1 PD PC</td>
<td>UL (NEMA) 3R</td>
<td>For outdoor use. This enclosure provides a degree of protection against dirt, rain, sleet, snow.</td>
</tr>
<tr>
<td>O1 PD PC</td>
<td>Bluetooth keypad</td>
<td>ACQ580 wireless Bluetooth-enabled control panel.</td>
</tr>
</tbody>
</table>

Adding these options may change the dimensions of the enclosure. Contact ABB for available configurations.

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### Shared features of the ABB all-compatible drives portfolio

**Drivetune smartphone app**

- The Drivetune smartphone app together with the Bluetooth-enabled control panel allow you to set up and commission the drive remotely from a safe and comfortable location, using the same primary settings menu that is available on the drive’s control panel.
ACQ580 drive family
Always flowing. Never still.

Water control panel with primary settings
- Primary settings make commissioning the drive easier than ever
- The optional Bluetooth-enabled control panel allows easy smartphone connectivity and remote support capability
- Easily available USB interface for PC and tool connection
- Help button for problem solving

Reliable communication protocols
- Embedded RTU Modbus and optional fieldbus adapters enable connectivity with all major automation networks and control systems

Ingress protection
- ACQ580 drives are available in multiple different UL/NEMA classes

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Built-in pump application
- The built-in pump application software in the ACQ580 drives is designed to enhance the reliability and durability of the water and wastewater application in which it is used. The functions protect the pump and secure its optimal functionality, increasing cost efficiency.

Reliability and quality
- All units are tested under full load at maximum allowed ambient temperature to verify quality
- Printed circuit boards have an extra coating to protect against humid and harsh environments

Harmonic mitigation options
- The ACQ580-01 has optimized DC chokes standard for harmonic mitigation
- Compliant with IEC/EN61000-3-12