

LOW VOLTAGE AC DRIVES

ABB drives for HVAC

ACH580, 0.75 to 500 kW



Comfort. It requires efficient systems to control heating, ventilation, and air conditioning (HVAC).

For half a century, ABB has been leading the way in optimizing HVAC systems using drive control. ACH580 drives provide the quality, reliability, and energy savings you expect, and are easy to use and safe to maintain.

Leading the way in HVAC drives

The ACH580 drive sets new standards in both simplicity and reliability, and ensures smooth, energy-efficient operation of your HVAC systems in normal and mission-critical situations. Built-in features reduce on-site commissioning time, add value to existing control systems and provide easy diagnostics and troubleshooting.

Scalable product for all your needs

The ACH580, with an offering ranging from wall-mounted and cabinet-built drives to ultra-low harmonic drive variants, integrates easily into your facility and the power grid in different environments. ACH580 drives are ideal for controlling HVAC fans, pumps, compressors, air-handling units and chillers used in hospitals, data centers, shopping centers, tunnel ventilation, factories, office buildings, and more.

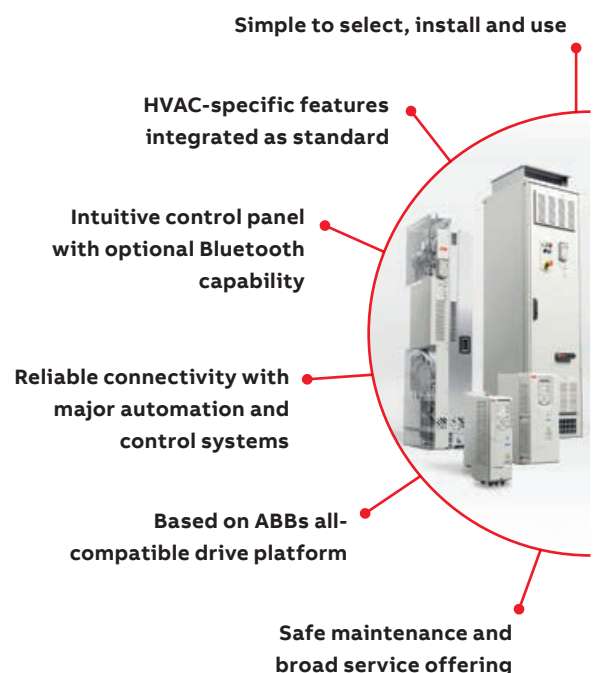
Maximum usability

The ACH580 drive series provides common features throughout the whole product family, making it easy for you to install, commission, and use them for your entire installation.

Advanced HVAC features

The drive comes with a variety of new features, such as a new primary settings menu that allows you to commission and program the drive based on your

application. Sleep and timed functions are built into the software to ensure that the drive doesn't run when you don't need it. Another significant feature of the ACH580 drive to increase life and property safety is its in-built override mode.



ACH580 ultra-low harmonic drive variant

Overcome challenges of harmonics

Harmonics in electrical systems can be considered as pollution of the electrical grid and can have negative effects on equipment.

ABBs HVAC ultra-low harmonic (ULH) drives are designed with built-in harmonic avoidance systems and meet low harmonic limit recommendations from IEEE519 and G5/5. By using special ultra-low harmonic drives, the problems caused by harmonics are avoided in the first place. ACH580 ULH drives have excellent harmonics performance, keeping the current harmonics in undistorted networks below 3% under all load conditions.

All-in-one concept

The ACH580 ULH drives for HVAC are perfectly suitable for applications that require low harmonic content, eliminating the risk of resonance, the need for additional hardware, and thus the need to add extra cooling. All this in a simple, compact and cost-efficient package.

Secured operation under special conditions

In addition to providing low harmonics to the supply network, the active supply unit in the ACH580 drive is able to boost output voltage ensuring reliable operation in weak networks. The voltage boost capability can also be utilized to overcome voltage drops caused by long supply or motor cables.

Technical data	
Voltage and power range	3-phase U_N 380 to 480 V, +10/-15%
Wall-mounted ACH580-01 Module ACH580-04 Cabinet-built ACH580-07 Ultra-low harmonic ACH580-31	0.75 to 250 kW 250 to 500 kW 75 to 500 kW 4 to 45 kW
Supported motor types	Asynchronous motor, permanent magnet motor (vector), SynRM (vector)
Frequency	0 to 500 Hz
Ambient conditions	ACH580-01, ACH580-31: -15 to +50 °C ACH580-07: 0 to +50 °C ACH580-04: -15 to +55 °C 5 to 95% no condensation allowed
Degree of protection	ACH580 drives are available in IP20, IP21 (UL type 1), IP42, IP54 and IP55 (UL type 12)
Inputs and outputs	2 analog inputs, V or mA 2 analog outputs, V or mA 6 digital inputs 3 relay outputs optionally I/O can be extended to add 24 V AC/DC supply for control, relay and transistor outputs, PTC input, 115/230 V AC digital inputs
Communication	
Embedded	BACnet MS/TP, Modbus RTU
Options	BACnet/IP, Modbus TCP and other communication protocols
Application functions	First start assistant Primary settings for HVAC applications Hand-Off-Auto operation mode Start interlock (de-frost) Delayed start Run permissive (damper monitoring) Override operation mode Real-time clock (scheduling) PID controllers for motor and process Motor flying start Motor preheating Energy optimizer and calculators Power loss ride through Motor voltage boost (ACH580-31)
Compliance	
Standards and directives	EN 61800-5-1: 2007; IEC/EN 61000-3-12 EN61800-3:2004 + A1:2012 Category C2 Safe torque off (EN 61800-5-2)
EMC (according to EN61800-3)	ACH580-01, ACH580-07 75-250 kW and ACH580-31 class C2 ACH580-04 and ACH580-07 250-500 kW class C3
Harmonics	With ACH580-31 also IEEE519 and G5/5

For more information contact your local ABB representative or visit:

new.abb.com/drives/HVAC
www.abb.com/drivespartners
www.abb.com/motors&generators

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