Drives for HVAC
ACH580, 1 to 350 hp

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.

Leading the way in HVAC drives
Built-in features reduce on-site commissioning time, add value to existing control systems and provide easy diagnostics and troubleshooting.

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.

Highlights
- Simple to select, install and use
- Integrated HVAC-specific features
- Intuitive control panel with optional Bluetooth capability
- Reliable connectivity with major automation and control systems
- Based on ABB's all-compatible drive platform
- Safe maintenance and broad service offering

ACH580 ultra-low harmonic drive

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

All-in-one concept
ABBs HVAC Ultra-Low Harmonic (ULH) drives have all the harmonic mitigation technology in the drive. With a THDi of 3% or less, there is no need for external components to install with the drive for reducing harmonics.

Secured operation under special conditions
The ACH580 ULH drive offers a reliable solution to overcome these challenges as it is able to lower the harmonic content so that sensitive equipment stay running. In addition, the ACH580 ULH greatly reduces the risk of generator failure when you need it the most.

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ACH580-01 and ACH580-31 technical data

Compliance	
ACH580-01/31	CE, UL, cUL, CSA, and EAC
ACH580-XxR	UL
Power range	
ACH580-01	1 to 350 hp (frame sizes R1 to R9)
ACH580-31	5 to 400 hp (frame sizes R3, R6, R8, R11)
Input voltage (U_1)	
ACH580-xx-xxxA-2	208/240V
ACH580-xx-xxxA-4	480V
ACH580-xx-xxxA-6	600V
Input voltage tolerance	+10% / -15%
Phase	3-phase (1-phase, 240 V)
Power factor (cosφ) at nominal load	
ACH580-01	0.98
ACH580-31	1.0
Efficiency at rated power	
ACH580-01	98.0%
ACH580-31	96.5%
Frequency	48 to 63 Hz
Supported motor control	Scalar and vector
Supported motor types	Asynchronous motor, permanent magnet motor (vector), SynRM (vector)
Degree of protection	UL (NEMA) Type 1, as standard UL (NEMA) Type 12, as option UL (NEMA) Type 3R, as option
Ambient conditions	-15 to +50 °C (5 to 122 °F): No frost allowed. Output derated above +40 °C (104 °F)
Harmonic mitigation	
ACH580-31	Harmonics are below the limits defined in IEEE519
Control connections	Two analog inputs, two analog outputs, six digital inputs including thermistor input, three relay outputs, external 24 V DC supply input, USB via control panel
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) CHDI-01: Six (6) 115/230V AC digital inputs and two relay outputs
Communication extension modules	Standard: BACnet MS/TP, Modbus RTU, Johnson Controls N2 Options: BACnet/IP, DeviceNet, Ethernet IP, PROFIBUS DP, LonWorks (Q3, 2019)
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 Hand-Off-Auto control panel with Bluetooth (ACH-AP-W), as option Control panels feature battery back-up