

LOW VOLTAGE AC DRIVES

Drives for HVAC

ACH580 ultra-low harmonic drive, 5 to 400 hp



The ACH580 ultra-low harmonic (ULH) drive provides an unprecedented compact design that delivers unity power factor with a 3% or less THDi. By meeting the most stringent requirements of the IEEE519 recommendations, the ACH580 ULH drive reduces risk of electrical disturbance when operating on a back-up generator.

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.

ACH580-31 technical data

Compliance ACH580-31 ACH580-XxR	CE, UL, cUL, CSA, and EAC UL
Power range	5 to 400 hp (frame sizes R3, R6, R8, R11)
Input voltage (U_i) ACH580-xx-xxxA-4	480V
Input voltage tolerance	+10% / -15%
Phase	3-phase
Power factor (cosφ) at nominal load	1.0
Efficiency at rated power	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
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