LOW VOLTAGE AC DRIVES

ABB drives for HVAC

ACH480, 0.75 to 22 kW

ACH480 drives for HVAC are optimized for cabinet installations. Compactness, broad functionality and flexibility make them the perfect choice for OEMs and panel builders.

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01 ACH480 drives can be integrated with several types of AC motors.
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02 ABB HVAC drives are ideal to control many kinds of applications.
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03 Due to its compact size, the ACH480 drive needs little space in the mechanical room.

Complete HVAC functionality in a compact package
Despite its small size, the drive has complete functionality for controlling not only fans, pumps and compressors, but also more complex HVAC equipment like air-handling units.

Effortless installation, commissioning and operation
While the built-in features significantly reduce installation time, the intuitive control panel with an HVAC-specific primary settings menu and help assistants makes startup, commissioning and operation easy. The optional Bluetooth® capability enables the commissioning and monitoring of the drive from a distance.

Reliability and quality
Product features, such as coated boards, earth fault protection, undervoltage control, and the ability to operate at an ambient temperature of 50 °C without derating, ensure process reliability. Every drive is tested, verifying its performance and all protective functions.

Instant availability
ACH480 drives are widely available from ABB authorized partners and distributors, and from ABB's central and regional stocks for immediate delivery.

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Technical data

Voltage and power range	3-phase, 380 V to 480 V, +10%/-15% 0.75 up to 22 kW
Frequency	48 Hz to 63 Hz
Degree of protection	IP20 UL Type 1
Ambient conditions	-10 °C to 50 °C no derating required, no frost allowed +50 °C to +60 °C with derating
Compliance	CE EAC UL, cUL Low Voltage Directive 2014/34/EU, EN 61800-5-1: 2007 Machinery Directive 2006/42/EC, EN 61800-5-2: 2016 EMC Directive 2014/30/EU, EN 61800-3: 2004 + A1: 2012 RoHS directive 2011/65/EU TÜV certification for functional safety
Functional safety	STO according to EN 61800-5-2: 2016, IEC 61508 Parts 1-2:2010, ISO 13849-1:2015, ISO 13849-2:2012, IEC 62061:2015 SIL 3/PL e
EMC	EMC according to EN 61800-3: 2004 + A1: 2012 Class C2 as standard Class C1 with external filter as option
Control connections	Standard I/O configuration (base unit with RIIO-01 extension) [1]: • 2 analog inputs (V or mA mode) • 2 analog outputs (AO1 V or mA mode, AO2 only mA mode) • 6 digital inputs (DI5 digital or frequency input) • 3 relay outputs • EIA-485 (BACnet MS/TP, Modbus RTU, N2) • 2 auxiliary voltage outputs 24 V DC (can be used for external auxiliary power supply – requires use of side option BAPO-01) • Reference voltage 10 V DC • Safe torque off (SIL 3/PL e) Reduced I/O configuration (base unit with BIO-01 extension) [2]: • 1 analog input (V or mA mode) • 5 digital inputs (DI5 digital or frequency input) • 1 digital output • 1 relay output • Reference voltage 10 V DC • 1 auxiliary voltage output 24 V DC (can be used for external auxiliary power supply – requires use of side option BAPO-01) • Safe torque off SIL 3/PL e) Base unit I/O configuration [2]: • 2 digital inputs • 1 relay output • 1 auxiliary voltage output 24 V DC (can be used for external auxiliary power supply – requires use of side option) • Safe torque off SIL 3/PL e) Assistant control panel: • Mini USB for PC tool connection
Control and communication options	
Fieldbus adapters	BACnet/IP, Modbus/TCP, PROFIBUS DP, PROFINET, CANopen, DeviceNet, EtherNet/IP, EtherCAT, EtherNet POWERLINK as internal options Ethernet adapter for remote monitoring as external option
PC tools	Drive composer entry available for free via ABB website Drive composer pro
Control panel options	ACH-AP-H, assistant control panel as standard ACH-AP-W, Bluetooth assistant control panel RDUM-01, panel bus adapter to connect a remote control panel to a single drive CDPI-02, panel bus adapter to chain the control panel to several drives DPMP-01, panel flush mounting kit DPMP-02, panel surface mounting kit

[1] Can be used with the embedded fieldbus only
[2] Can be used with the optional fieldbus adapters

Compactness. Broad functionality. Flexibility.

Essential features inside
- 2 PIDs to control HVAC processes
- Multi-fan or multi-pump control for up to 4 units
- EMC C2 filter
- BACnet MS/TP, Modbus RTU and N2
- Safe torque off (STO)
- Control panel with graphical display

Get started easily
- Quick access to terminals for drive cabling and wiring
- Side-by-side mounting and small clearance for cooling, saving space in the cabinet
- Integrated PID controllers, relays, real-time clock, timers, and supervision functions eliminating the need for external PLCs, DDCs or BMS
- Intuitive user interface making drive start-up, operation and diagnostics effortless
- Ready-made HVAC assistants for pumps, fans, or compressors for shorter commissioning time
- Support for the most common communication protocols
- Free Drive composer software to commission and monitor the drive
- Adaptive programming for customizing the drive for specific needs without any previous programming knowledge

Learn it once, use it everywhere
- ACH480 and ACH580 drives share the same I/O terminals in a standard configuration, fieldbus options, operating logic, and user interface
- The common drives architecture lets users apply the knowledge gained with one ABB drive to others, enabling a smooth transition between drives from the ABB all-compatible portfolio

There is more to this drive

The optional **Bluetooth® control panel** improves the accessibility of drives installed in hard-to-reach areas and increases safety by keeping users out of arc flash zones.

The compact size together with the ability to share one control panel between several drives and the control panel door mounting kits make the ACH480 an **optimal product for cabinet installations.**

Advanced motor control includes support for asynchronous motors, as well as permanent magnet and synchronous reluctance motors for even higher energy savings.

For more information please contact your local ABB representative or visit:

abb.com/drives
abb.com/drivespartners
abb.com/motors&generators

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