LOW VOLTAGE AC DRIVES

Compact drive, impressive results

ACH180, 0.37 to 22 kW

Designed specifically for HVACR applications, the ACH180 delivers reliable, cost-effective, and energy-efficient performance. This makes it the ideal solution to fulfill your essential HVACR needs.

Dedicated to HVACR
This compact drive incorporates our extensive HVACR experience, meeting essential application requirements for higher comfort and lower energy use. Built-in HVACR protocols including BACnet seamlessly integrate with OEM or building automation systems. The ACH180 can control besides conventional induction and permanent magnet motors also high efficient permanent magnet assisted synchronous reluctance motors to meet the highest efficiency standards.

Cost-effective
With the ACH180, you can reduce the size of your cabinet due to its compact design. Additionally, its controlled airflow helps limit contamination, which extends the lifespan of your drive. Its higher ambient operating conditions can minimize the need for air-conditioned cabinets and ultimately help reduce costs and carbon footprint.

Easy to use
The ACH180 has an embedded graphical user interface with a simple and familiar parameter structure enabling faster commissioning. Installation is made easy with color-coded control and spring cage terminals on this simply designed product.

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ACH180 is ideal to control fans in air handlers, fan arrays and cooling towers.

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There are a variety of different inputs and control schemes that may be applied to the drive being used on pumping applications.

Technical data

Mains connection	
Voltage and power range	1-phase, 208 to 240 V, +10%/-15%, 0.37 kW to 3 kW 3-phase, 208 to 240 V, +10%/-15%, 0.37 kW to 11 kW 3-phase, 380 to 480 V, +10%/-15%, 0.55 kW to 22 kW
Dimension (H x W x D, mm)	R0: 174 x 70 x 143, R1: 190 x 70 x 143, R2: 202 x 120 x 143, R3: 205 x 170 x 174, R4: 205 x 260 x 178
Frequency	50/60 Hz ±5%
Degree of protection	IP20 (UL open type)
Ambient conditions	R0: -10 to 50 °C with derating R1-R4: -10 to 60 °C with derating
Altitude	0 to 1,000 m without derating 1,000 to 2,000 m with derating of 1%/100 m
Approvals	CE, RoHS, UL, cUL, TÜV NORD, UKCA, KC, RCM, EAC
Safety	Safe torque off (STO) acc. to EN/IEC 61800-5-2, IEC 61508 ed2: SIL 3, IEC 61511: SIL 3, IEC 62061: SIL CL 3, EN ISO 13849-1: PL e
EMC	EMC category C2 (1-phase drives) EMC category C3 (3-phase drives) EMC category C1 (1-phase and 3-phase) with an external filter
Product type	ACH180-04S-xxxx-1: 1-phase 200 to 240 V, ACH180-04S-xxxx-2: 3-phase 200 to 240 V, ACH180-04S-xxxx-4: 3-phase 380 to 480 V
Control and connectivity	
Motor control mode	Scalar control Sensorless vector control
I/O interface	4 x DI: PNP or NPN connection, 2 x AI: SW configures mA or V mode, AI1 can be DI5 1 x AO: SW configures mA or V mode 1 x DO: 24 V DC, 200 mA 1 x RO: 230 V, 2 A 1 x RJ45: Connects to control panel or PC tool
User interface	Integrated icon-based control panel
Drive programming	Adaptive and sequence programming
Communication	Protocols as standard (EIA-485): Modbus RTU, BACnet MS/TP, N2, GP1
PC Tool	Drive Composer Entry available for free from ABB website Drive Composer Pro
Mobile App	Drivetune for commissioning via Bluetooth
Control panel options	ACH-AP-H assistant control panel ACH-AP-W assistant control panel with Bluetooth interface

Learn more from ACH180 website.

Learn more from ABB variable speed drives, motors and PLCs for HVAC website.

Highlights

Ease of use
- Compact design, uniform height and depth
- Built-in graphical user interface
- Hand-Off-Auto control panel
- Spring cage terminals
- Part of ABB's all-compatible drives portfolio

Reliability
- Conformally coated circuit boards as standard
- Minimized air flow through the electronics
- Earth fault protection
- Designed for 60 °C ambient temperature with derating
- All drives are factory tested at maximum temperatures with full nominal loads

HVACR specific features
- Auto start after power loss
- Run permissive (damper monitoring)
- 4 start interlocks (safety switches, freeze stat)
- Under/overload curves (broken belt, clogged filter, dry pump/no flow supervision)
- Override mode for life safety smoke control applications
- PID closed loop controllers for HVACR applications
- Improve the total (motor and drive) efficiency up to 20% with Energy Optimizer
- Motor flying start and motor pre-heat

Scalability
- Sensorless vector control
- Supports EC Titanium™
- Supports permanent magnet synchronous motors
- Built-in EMC filter
- Built-in STO
- Built-in HVACR communications
- Adaptive and sequence programming

Energy efficiency and Ecodesign
- Fulfills new Ecodesign Regulation (EU) 2019/1781
- Efficiency class: IE2
- Reduce energy consumption and CO_2 emissions

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

new.abb.com/drives
new.abb.com/drives/drivespartners
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