ABB drives for HVAC
ACS320, 1.2 to 50.8A

The compact ACS320 will save energy throughout your pump and fan HVAC applications. From booster pumps, exhaust and condenser fans to supply and return fans, the drive's built-in HVAC features such as embedded BACnet (MS/TP) ensure easy and complete integration into building management systems.

Making HVAC user friendly
The preprogrammed application macros and easy to use control panel make installation and drive setup simple. The control panel on the ACS320 uses HVAC terms and units, removing any guess work, and comes with 18 languages built-in. The unified height and depth of the drive frame sizes minimizes needed installation space.

Energy savings
With energy savings of up to 70 percent, the ACS320 can help to attain sustainability targets. The drive's energy optimizer tunes the drive's performance to help save even more energy. Built-in energy efficiency calculators monitor the energy used and saved. The savings are shown in kilowatt-hours and in local currency. Carbon dioxide (CO_2) emission reductions are also shown.

Technical data

Supply connection

Voltage and power range	1-phase, 200 to 240 V ±10% (2.4 to 9.8 A)
	3-phase, 200 to 240 V ±10% (2.6 to 50.8 A)
	3-phase, 380 to 480 V ±10% (1.2 to 44 A)
Frequency	48 to 63 Hz

Connections

Motor types	Asynchronous induction motors
Frequency	0 to 500 Hz
Switching frequency	Selectable 4, 8, 12 and 16 kHz (derated)
Type of control	Scalar control and user definable U/f profiles Energy optimizer
Inputs and outputs PTC and PT100	Two analog inputs, one analog output, five digital inputs (DI5 can be programmed for pulse train input), one digital output (can be programmed as pulse train output), one relay output. Any of the 5 digital inputs or analog input can be configured for PTC. Analog output can be used to feed PT100 sensor.
Communication	Embedded fieldbus protocols: BACnet (MS/TP), Modbus RTU (EIA-485), Johnson Controls N2, Siemens Building Technology FLN (P1). Available as an external option: Ethernet adapter for remote monitoring.

Options

User interface	Basic control panel, ACS-CP-C Advanced HVAC control panel, ACH-CP-B Panel mounting kits for cabinet door installation
I/O extensions	MREL-01 module, three Form C relay outputs, 250 V AC/30 V DC
Chokes and filters	AC input and output chokes EMC filters
PC tools	DriveWindow Light 2

Environmental limits

Degree of protection	IP20/optional NEMA 1 kit
Ambient temperature	-10 to +50 ºC (+14 to +122 ºF), no frost allowed

Product compliance

Directives and standards	Low Voltage Directive 2006/95/EC, Machinery Directive 2006/42/EC, EMC Directive 2004/108/EC, CE and C-Tick approvals, UL, cUL and GOST R, RoHS compliant, Quality assurance system ISO 9001
EMC	Class C3 (2nd environment unrestricted distribution) built-in as standard Class C2 and C1 with external optional EMC filters

Complete HVAC functionality

The ACS320 comes standard with four embedded communication protocols, including BACnet (MS/TP) for easy integration into building management systems. Built-in real time clock and timers help you optimize energy use. The drive provides full output current at ambient temperatures of up to 50 °C without derating. Built-in software for controlling common HVAC applications includes:
- 2 PID controllers
- Timers with real time clock
- Pump and fan control
- Cooling fan control
- Pump cleaning
- Underload (broken belt) detection
- Pump protection
- Sleep function
- Pipe fill (precharge)

Typical applications for the ACS320 include:
- Supply and return fans
- Condenser fans
- Exhaust fans
- Fume hood fans
- Booster pumps
- Submersible pumps

Easy to order

The drive can be ordered with a blank panel, the basic control panel, or can be ordered with the advanced HVAC control panel. These three packages simplify the ordering process.

Advanced PC tool

The DriveWindow Light 2 PC tool can be used to monitor process performance or to set and tune drive parameters. It can also be used in offline mode to configure drive parameters before the drive installation on site.