

LOW VOLTAGE AC DRIVES

ABB machinery drives

ACS180, 0.25 to 22 kW



The ACS180 is an all-compatible ABB machinery drive ideal for compact machines. This cost-effective and compact drive is optimized for machine builders requiring ease of use and reliable machine performance.

Reliable operation even in harsh conditions

ACS180 drives have improved reliability in harsh conditions. Coated circuit boards and minimized airflow through the electronics combined with advanced ground fault protection guarantee reliable operation and maximized uptime. The drives are designed for 50 °C ambient temperature without derating (in heavy-duty use) and up to 60 °C with derating.

Optimal drive for applications

The ACS180 drive offers excellent performance and quality at its price level with all essential machinery application features embedded. Meanwhile, the built-in EMC filter and STO bring savings in cabinet size and costs, because an external EMC filter or contactor is unnecessary. Heavy-duty use and light-duty use are rated in one drive. This will help users choose the optimal drive for each application.

Ease of use

Installation and commissioning are quick and easy thanks to the ACS180's intuitive graphical user interface, simple parameter structure and spring control terminals. A compact drive size and the possibility for side-by-side installation help reduce the cabinet size.

Scalability

ACS180 drives support sensorless vector control with induction and permanent magnet motors. Customized functions with adaptive and sequence programming are possible. The ACS180 drive is part of the ABB all-compatible drives portfolio, all with the same user interface and PC tools.



ACS180 drives are ideal for the food and beverage industry.



ACS180 drives can be used for material handling.



ACS180 drives are optimal for pump and fan applications.

Technical data

Mains connection

Voltage and power range	1-phase, 200 to 240 V, +10%/-15%, 0.25 to 3 kW 3-phase, 200 to 240 V, +10%/-15%, 0.25 to 11 kW 3-phase, 380 to 480 V, +10%/-15%, 0.37 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
Overload capacity	180% I_{Hd} , 2 seconds, at start-up In heavy-duty use 150% I_{Hd} , 1 minute per 10 minutes In light-duty use 110% I_{Ld} , 1 minute per 10 minutes
Frequency	50/60 Hz \pm 5%
Degree of protection	IP20 (UL open type)
Ambient conditions	-10 to +50 °C at heavy duty -10 to +40 °C at light duty with derating up to 60 °C (except R0, which has max. temperature of 50 °C)
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, C3 or C4 according to different voltage range and type
Product type	ACS180-04S-xxxx-1: 1-phase 200 to 240 V, C2 EMC, STO built-in ACS180-04S-xxxx-2: 3-phase 200 to 240 V, no built-in EMC filter, C4 EMC, STO built-in ACS180-04S-xxxx-4: 3-phase 380 to 480 V, C3 EMC, STO built-in ACS180-04N: No built-in EMC filter, C4 EMC, no STO

Control and connectivity

Motor control mode	Scalar control Sensorless vector control
I/O interface	4 x DI: PNP or NPN connection, DI3 and DI4 can be frequency input 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, 60 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	EIA-485 Modbus RTU protocol built-in
PC tool	Drive Composer Entry, available for free from ABB website Drive Composer Pro
Mobile APP	Drivetune for commissioning via Bluetooth
Control panel options	ACS-AP-S assistant control panel ACS-BP-S basic control panel ACS-AP-W assistant control panel with Bluetooth interface



Key features

Reliability and consistent quality

- Coated circuit boards as standard
- Minimized air flow through the electronics
- Earth fault protection
- Design for up to 50 °C without derating
- All drives are tested at maximum temperatures with full nominal loads

Ease of use

- Compact design
- Built-in graphical user interface
- Intuitive user menu
- Spring control terminal
- Part of ABB all-compatible drives portfolio

Scalability

- Sensorless vector control
- Supports permanent magnet synchronous motor
- Built-in EMC filter
- Built-in STO
- Built-in Modbus RTU
- Adaptive and sequence programming

Energy efficiency and Ecodesign

- Fulfill new Ecodesign Regulation (EU) 2019/1781
- Efficiency class: IE2
- Reduce energy consumption and CO₂ emissions

