

LOW VOLTAGE AC DRIVES

ABB machinery drives

ACS380, 1/3 to 30 HP



The ACS380 machinery drive is part of ABB's all-compatible drives portfolio. This compact and adaptable drive is designed for machine builders requiring persistent and reliable performance for their machine.

Persistent performance for your application

The ACS380 machinery drive is ideal for machine building thanks to its robust and compact design, good motor control performance and built-in functions such as safe torque off (SIL 3) and embedded machine control functions like mechanical brake control. Examples of typical ACS380 applications are for example mixers, centrifuges, conveyors and cranes.

Easy to adapt and configure to machines

With ACS380, commissioning and use is quick and easy thanks to its intuitive control panel, and having all the essential features built-in. Configuration can even be made to unpowered drives. The drive can be adapted to various needs thanks to its good programmability including even extensive PLC type block programming and extensive selection of variants and options allowing the drive to be optimized e.g. for various communication, I/O and EMC requirements.

Reliability and consistent high quality

The ACS380 drives have improved durability and reliability in harsh conditions, including coated circuit boards, optimized air flow and tolerance for up to 60 °C ambient temperature. All drives are tested during production at maximum temperatures with nominal loads. Tests cover both performance and all protective functions.



Technical data

Mains connection	
Voltage and power range	1-phase, 200 to 240 V, +10%/-15% 1/3 to 3 HP (0.25 to 2.2 kW) 3-phase, 200 to 240 V, +10%/-15% 1/3 to 15 HP (0.25 to 11 kW) 3-phase, 380 to 480 V, +10%/-15% 0.5 to 30 HP (0.37 to 22 kW) Built-in braking chopper and common DC connection with internal charging circuit
Frequency	50/60 Hz ±5%
Degree of protection	IP20 as standard (UL open type)
Ambient conditions	-10 to +50 °C (14 to 122 °F), up to +60 °C (140 °F) with derating (except R0)
Altitude	All variants 0 to 2000 m, derating above 1000 m (3300 ft) 3-phase, 380 to 480 V drives 0 to 4000 m (see manual for usage restriction at 4000 m), derating above 1000 m (3300 ft)
Compliance	CE, RoHS, UL, cUL, EAC, CSA, TÜV NORD
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 (200 V & 400 V) or EMC category C4 (200 V) and C3 (400 V), according to EMC Directive 2014/30/EU, EN 61800-3:2004 + A1 2012
User interface	Integrated icon-based control panel
Drive programming	Adaptive programming
Connectivity types	
Standard variant connections	Four digital inputs, two digital input/outputs, two analog inputs one analog output, one relay outputs, STO (SIL 3), tool connection (RJ-45), Modbus RTU
Configured variant connections	Two digital inputs, one relay output, STO (SIL 3), tool connection (RJ-45), one preconfigured protocol
Preconfigured fieldbus protocols	PROFIBUS DP with DSUB-9 connector CANopen® with plug-in terminal block or with DSUB-9 connector EtherCAT® with 2 x RJ-45 PROFINET IO with 2 x RJ-45 EtherNet/IP with 2 x RJ-45 Modbus TCP with 2 x RJ-45
Control options	
Extension modules	BTAC-02 Encoder interface with External +24 V DC support BREL-01 External relay option (four relay outputs) BAPO-01 External +24 V DC support BIO-01 I/O Extension module (front option, can be used together with fieldbus)
PC tools and accessories	BCBL-01 USB to RJ-45 data cable Drive composer tool entry, available for free via ABB website Drive composer tool pro Automation builder and Drive Manager for single point of commissioning through PROFIBUS and PROFINET networks
Control panel options	ACS-AP-S assistant control panel ACS-AP-I assistant control panel ACS-AP-W assistant control panel with Bluetooth interface ACS-BP-S basic control panel



Video playlist:
ACS380 how-to
videos

For more information contact your local ABB representative or visit:

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

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Reliable. Adaptable. All-compatible.

For persistent performance

- Support for asynchronous, permanent magnet and synchronous reluctance motors
- High speed and torque control performance with 3-phase current transducers
- Support for encoder feedback (option)
- Integrated brake chopper
- Integrated safe torque off (STO)
- Support for remote and Bluetooth access

For easy configuration

- Compatible with a wide range of fieldbus protocols
- Preconfigured fieldbus modules for easy commissioning
- Possibility to extend I/O
- External +24 V AC/DC (option)
- Different EMC variants with integrated filter
- Adaptive programming for customizing the drive for the application
- Support for configuration for unpowered drives
- Member of all-compatible drives portfolio with similar user interface and PC tools

For reliability and constant quality

- Coated boards as standard
- Minimized air flow through the control section
- Advanced ground fault protection by 3-phase current transducers
- Design for up to 60 °C
- All drives tested during production at maximum temperatures with full nominal loads