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PORTFOLIO GUIDE



ABB DRIVES, CONVERTERS AND CONTROLS

Comprehensive portfolio of energy-efficient solutions



- Improving energy efficiency is the fastest, the most sustainable and the cheapest way to reduce greenhouse gas emissions.
- The installed base of ABB drives saves over 310 million megawatt hours per year. This is equivalent to the amount of energy used by 75 million households.

ENGINEERED
TO OUTRUN

THE MOST EFFECTIVE WAY TO A MORE SUSTAINABLE PROCESS IS ALSO THE MOST PROFITABLE



Improve your processes with drives

INCREASED LIFETIME – A lower starting current decreases the electrical stress on the motor and network, while a smooth ramp up to full speed also reduces mechanical wear on your equipment, prolonging its lifetime.

INCREASED PRODUCTIVITY – The use of drives enhances the productivity of applications by reducing unplanned stops caused by excessive heating of the motor or sudden breakdowns of mechanical equipment due to high mechanical stress.

REDUCED NEED FOR MAINTENANCE – Being able to apply a softer starting moment and vary the speed and torque of an electric motor reduces wear and tear on both the motor and the machine it is driving. The ability to gradually bring a process up to speed helps prevent sudden shock loading, which can, over time, damage both motors and machines.

Further optimize your processes with AC drives

SUBSTANTIAL ENERGY SAVINGS – Rather than have an electric motor running continuously at full speed, using an electric drive allows the user to slow down or speed up the motor according to demand. Reducing motor speed in line with the actual demand of the process often means substantial energy savings and reduced operating costs.

OPTIMAL PROCESS CONTROL – An electric drive facilitates the attainment of the precise speed and torque required for a process, ensuring accuracy and, consequently, contributing to consistent end-product quality and throughput.

EFFICIENT SYSTEM UPGRADE – An electric drive allows for the removal of valves, gears, and belts, while also ensuring network dimensioning based on a lower starting current.

FUNCTIONAL SAFETY – ABB all-compatible drives have Safe Torque Off (STO) as standard. A wide range of functional safety modules are available as options. All drive-based safety functions are pre-certified and mostly conform to the highest safety levels SIL3/ Plc and communicate over PROFIsafe or CIP Safety protocols.

ABB drives common features

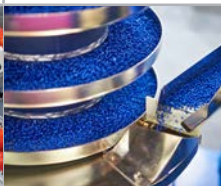
EASY TO SELECT – Finding the right product for your application is easy with our wide selection of ABB drives.

EASY TO PURCHASE – ABB drives are available directly from ABB and through selected ABB channel partners. Contact us to learn more and check the [ABB Channel Partners page](#) for additional details about ABB Value Provider network.

EASY TO INSTALL AND COMMISSION – ABB drives are not only simple to install but also offer a variety of mounting options, ranging from wall-mounted to cabinet-mounted configurations.

EASY TO USE – ABB drives are designed for easy installation, commissioning, and use. The user interface enables instant adjustments to speed or other advanced parameters.

Right products to right customers

		Servo drives	Machinery drives			High performance machinery drives
						
		e180 & e190	ACS180	ACS380	ACS380-E	ACS880-M04
Variable torque	Pumps, Fans, Agitators					
Basic constant torque	Compressors, Belt conveyors, Gates					
High torque requirements	Mixers, Extruders, Screw conveyors, Centrifuges, Rolling mill					
High precision, open or closed loop	Cranes, Spindles, Winding and unwinding					
High torque, precision and enhanced safety	Cranes, Winches, Kilns					
Position control and synchronizing	Stacker cranes, Rotary tables, Converting machinery					
Drive modules for OEMs and system integrators						

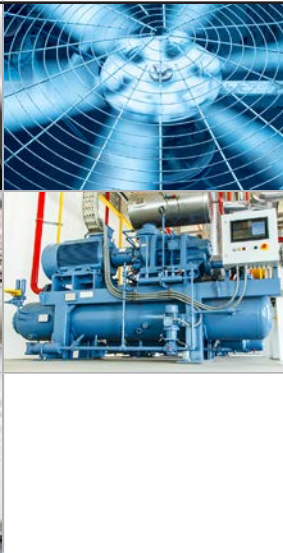
General purpose drives	HVACR drives	Water & wastewater drives	Industrial drives	DC drives
 ACS480/580	 ACH480/580	 ACQ580	 ACS880	 DCS880/580
				
				
				
				
Complete products for distribution and end-users				

ABB LOW VOLTAGE AC DRIVES

The ABB low voltage AC drives product range, from 0.18 to 6000 kW, is the widest selection available from any manufacturer.

These drives establish the global benchmark signifying reliability, simplicity, flexibility and ingenuity throughout the entire life cycle of the drive.



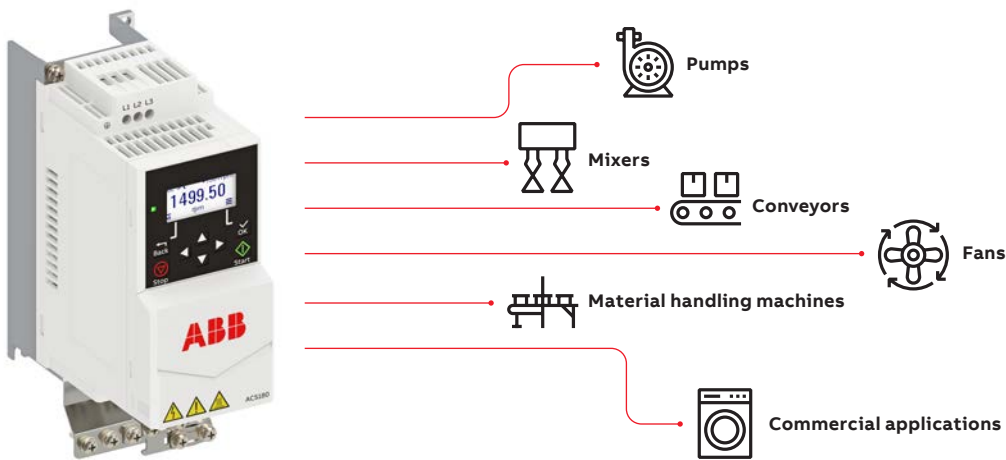
MACHINERY DRIVES

Keep your machines running

The all-compatible machinery drives provide high performance, adaptability and dependability for machine building needs. The drives help machine builders improve machine performance and provide more added value for their customers, while simultaneously cutting integration and maintenance costs.

The ACS180, ACS380, new ACS380-E, and ACS880 machinery drives are part of ABB's all-compatible drives portfolio, offering technically compatible solutions with long-term support for users, processes, businesses, and the environment.





Compact drive with essentials for machine builders

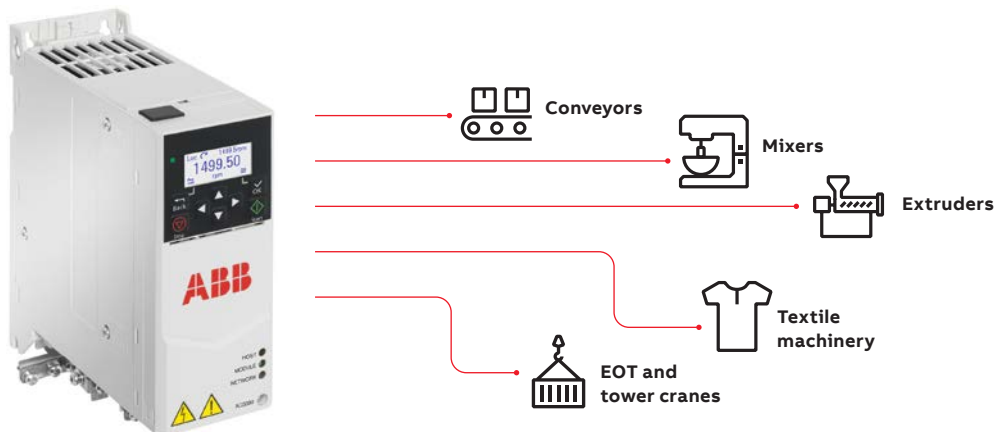
ACS180

Highlights

- Excellent motor control performance with open-loop vector control, supporting induction and permanent magnet motors
- Reliable operation even in harsh conditions – coated boards, optimized air flow, 50C ratings and full earth fault protection
- Dual ratings in one drive, support both heavy overloadability and light overloadability, optimal selection for pumps and fans
- Compact size, easy to be installed in small spaces and side-by-side
- Versatile integrated features: EMC filter, Safe Torque Off (STO), user panel, Modbus RTU
- Adaption to extended needs of machine via adaptive programming
- Part of ABB all-compatible drives portfolio

Features

- Power and voltage range:
 - 0.25 to 3 kW (1-phase 200 to 240 V)
 - 0.25 to 11 kW (3-phase 200 to 240 V)
 - 0.37 to 22 kW (3-phase 380 to 480 V)
- Enclosure class: IP20 as standard
- Integrated EMC filters C2 for 1-phase 200 V and C3 3-phase 400 V standard for ACS180-04S drives
- Integrated Safe Torque Off (STO) as standard for ACS180-04S drives
- Built-in Modbus RTU
- Integrated, icon-based control panel
- Scalar control and sensorless vector control
- Customized functions with adaptive and sequence programming
- Common DC connection and built-in braking chopper for R2 to R4 frame
- Options
 - Advanced control panel with USB or Bluetooth connectivity



Reliable performance and ease of integration for machine builders

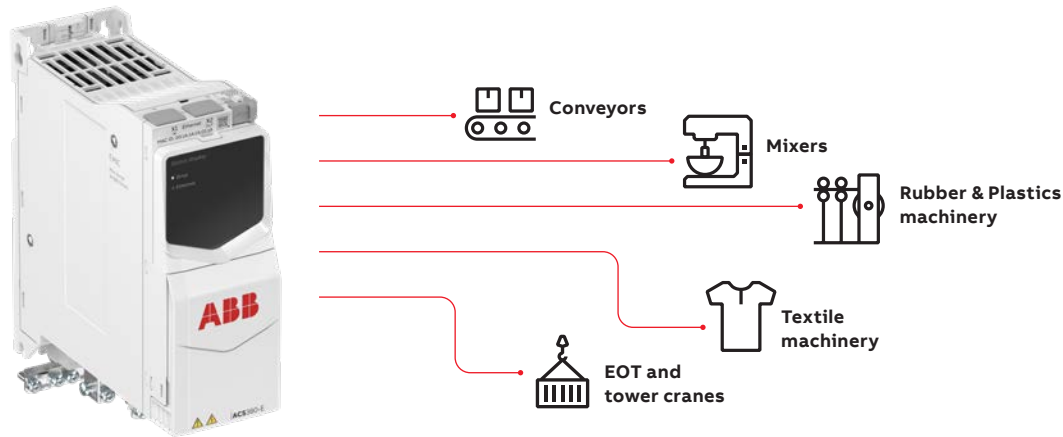
ACS380

Highlights

- Precise motor control for multiple motor types including induction, permanent magnet and synchronous reluctance motors
- Motor control performance with 3-phase current measurement meets demanding load profile requirements
- Connects with all major industrial automation networks
- Safe Torque Off (STO) is built-in as a standard, and can be controlled via PROFIsafe with an optional module
- Adaptive programming for logic development to customize drive operation for application specific requirements
- Part of ABB all-compatible drives portfolio
- Integrated Safe Torque Off (STO) as standard
- Product can be ordered as per application demands
 - Base variant – for I/O control
 - Standard variant – for I/O and Modbus control
 - Configured variant – for fieldbus control, extra I/O's and closed loop with encoders
- Integrated, icon-based control panel
- Scalar control, open and closed loop vector control
- Adaptive programming with function blocks and sequence programs
- Built-in braking chopper
- Common DC connection with built-in charging unit
- Options
 - Fieldbus adapter modules
 - I/O extensions, encoder interface, 24 V auxiliary power
 - PROFIsafe (STO, SS1-t)
 - Input chokes, du/dt filters
 - Advanced control panel with USB or Bluetooth connectivity

Features

- Power and voltage range:
 - 0.25 to 2.2 kW (1-phase 200 to 240 V)
 - 0.25 to 11 kW (3-phase 200 to 240 V)
 - 0.37 to 22 kW (3-phase 380 to 480 V)
- Enclosure class: IP20 as standard (optional UL type 1 kit)
- EMC categories C2 and C3 with an internal filter



Adaptable, secure and connected, for seamless machine control

ACS380-E

Highlights

Adaptable Connectivity

- One drive for all major Ethernet protocols – PROFINET, Ethernet/IP, Modbus TCP
- Fast Ethernet-based commissioning, remote access, and file backups
- Built-in I/O and high-performance motor control for smooth integration

Versatile Simplicity

- Supports all motor types including induction motors, Permanent magnet motors and servos, synchronous reluctance motors
- Compact, uniform depth and side-by-side install without de-rating
- Spring terminals and ejectable front mounts for faster, easier wiring
- “All-compatible” platform – learn ones, use everywhere

Robust Cybersecurity

- Secure boot, ABB-signed firmware, and tamper-proof supply chain
- SL2 support by 2027 for future compliance
- Designed for safe, secure, and reliable machine operation

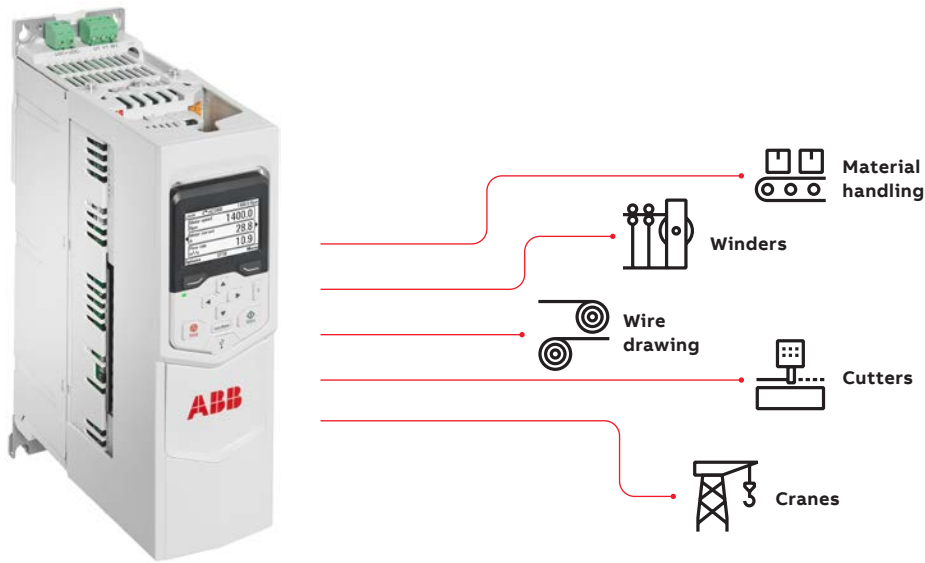
Features

- Power and voltage range:
 - 0.25 to 2.2 kW (1-phase 200 to 240 V) ^{*)}
 - 0.25 to 11 kW (3-phase 200 to 240 V) ^{**)}
 - 0.25 to 22 kW (3-phase 380 to 480 V) ^{***)}
- Enclosure class: IP20 as standard (optional UL type 1 kit)
- EMC category C2 built-in
- Integrated Safe Torque Off (STO) as standard
- Status display with RJ45 for external panel as standard
- Scalar control, open and closed ^{***)} loop vector control
- Adaptive programming with function blocks and sequence program
- Built-in braking chopper
- Protocols: Ethernet IP, Profinet, Modbus TCP/IP, EtherCat ^{***)}, Ethernet Powerlink ^{***)}
- Options:
 - Keypad display
 - I/O extensions, encoder interface ^{***)}

^{*)} Release Q4-2025

^{**) Release Q2-2026}

^{***)} Release Q2-2025



Easy to adapt and configure to machines

ACS880-M04

Highlights

- Excellent performance and compatibility with all kinds of machines
- Comprehensive connectivity
- Good possibilities for customizing the drive with IEC 61311-3 and adaptive programming
- Cost and time savings with drive-based functional safety
- Removable memory unit for fast drive replacement
- Optimized for cabinet assembly
- Top entry and bottom exit of the power cables enabling the optimal cabinet layout
- Bookshelf design
- Standard ACS880 with position control program (+N5700) provides solution for higher powers and more complex machinery applications
- Standard ACS880 with position control program (+N5700) provides solution for higher powers and more complex machinery applications.

Features

- Power and voltage range: 3-phase 0.37 to 22 kW, 200 to 240 V AC
- Power and voltage range: 3-phase 0.75 to 45 kW, 380 to 500 V AC
- Enclosure class: IP20
- Integrated Safe Torque Off (STO) as standard
- Built-in braking chopper
- Extensive I/O connectivity as standard
- Options
 - Extended connectivity to I/O
 - Speed and position feedback interfaces
 - Fieldbus adapter modules
 - Advanced control panel with USB or Bluetooth connectivity
 - Built-in/plug-in EMC filters for category C3, external EMC filters for category C2
 - Safety functions: SS1, SSE, SBC, SLS, SMS, SDI, SSM
 - PROFIsafe over PROFINET connectivity between drive and safety PLC
 - Application specific control programs including position control, tower crane, winder, etc.
 - EC61131-3 programming

GENERAL PURPOSE DRIVES

Get it fast.

Use it easily.

Improve your processes.

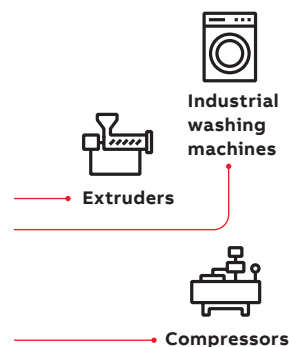
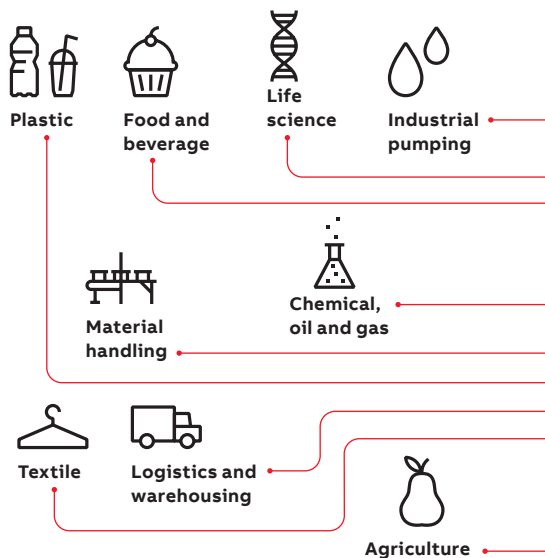
The general purpose drives are designed to control a wide range of applications such as mixers, conveyors, compressors, fans, pumps, and centrifuges.

They are also suitable for process control applications in industries such as material handling, food and beverage, chemicals, rubber and plastics, textiles and printing.

The ACS480 and ACS580 drives offer an optional software package for the food and beverage industry comprising two parts (Cooling compressor control and Anti-cavitation) to improve processes through segment-specific functions.

The drives are easy to select, install, configure, and use, saving considerable time. They are equipped with ready-made application specific control macros, making it easy to fulfill application requirements.

The general purpose drives ACS480 and ACS580 are part of ABB's all-compatible drives portfolio, offering technically compatible drives with long-term solutions and support for users, processes, business, and the environment.



Effortless process automation for a broad range of applications

ACS580

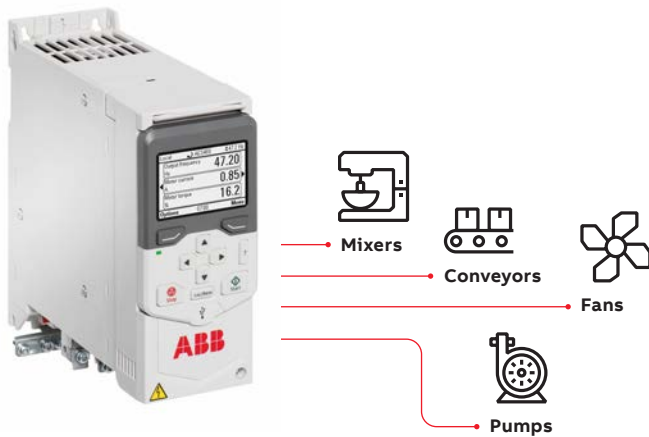
Highlights

- Wall-mounted, drive modules and cabinet-built drives to control a variety of applications
- Easy to select, install and use
- All essential features built into the drive
- Straightforward settings menu and assistants for fast commissioning
- Food and beverage segment specific software features including cooling compressor control and cavitation control
- Suitable for harsh environment with IP55 enclosure
- Energy efficiency features for optimal energy management and support for energy efficient motors
- Adaptive programming for fine tuning and engineering the drive functionality
- ATEX certified thermistor relay for potentially explosive environment (e.g., dust areas in F&B)
- Connectivity to most common automation networks and extensive selection of I/O options to match your needs
- Part of ABB's all-compatible drives portfolio

Features

- Power range 0.75 to 500 kW (3-phase 380 to 415 V, 440 to 480 V, 200 to 240 V)
- Wall-mounted drives, IP21 as standard (UL type 1), IP55 as option (UL type 12 in frame sizes R1-R9)
- Drive modules, IP00 as standard, IP20 as option
- Cabinet-built drives, IP21 as standard, IP42 and IP54 as options

- Assistant control panel as standard with primary settings and diagnostics menu with various assistants for effortless use of the drive
- EMC C2 filter for wall-mounted drives which allows safe installation in first environment
- EMC C3 and common mode filter for drive modules and cabinet-built drives which allow safe installation in second environment
- Integrated EMC C2 filter for drive modules and cabinet-built drives as option
- Built-in DC or AC choke to mitigate harmonics
- Brake chopper as standard up to 22 kW (R3), optional for R10-R11
- Adjustable switching frequency control reducing motor audible noise
- Options
 - Wide range of fieldbus adapters and remote monitoring
 - Relay extension, PTC-thermistor, I/O options to increase functionality, ATEX-certified PTC-thermistor, analog I/O extension, CAIO-01
 - Free entry level PC tool with USB connection on control panel
- Assistant control panel with Bluetooth capability
- Supports induction motors, permanent magnet motors and synchronous reluctance motors (SynRM)
- Safe Torque Off and Safe Stop over PROFIsafe and CIP-safety



Essential process efficiency for many applications

ACS480

Highlights

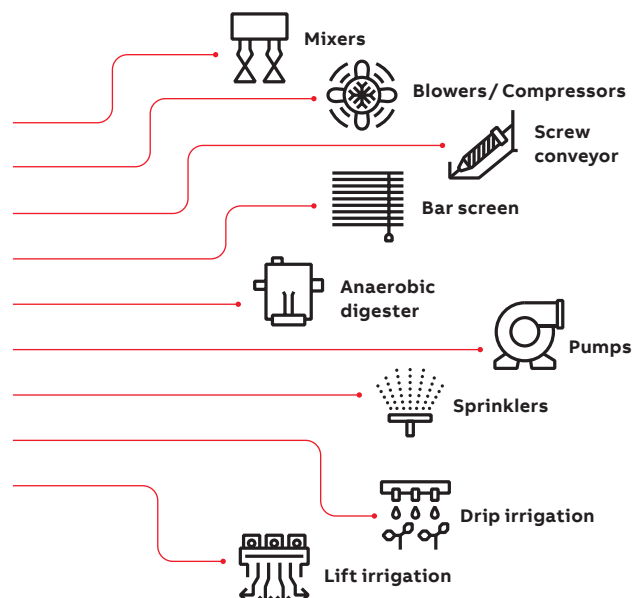
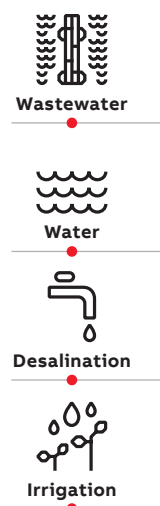
- Cabinet-optimized, compact design and all essential features built-in offer pure ease of use for various of applications, such as pumps, compressors, conveyors and fans
- Straightforward settings menu and assistants for fast commissioning
- Food and beverage segment specific software features including cooling compressor control and cavitation control
- Energy efficiency features for optimal energy management and support for energy efficient motors
- Connectivity to most common automation networks
- Part of ABB's all-compatible drives portfolio

Features

- Power range 0.37 to 22 kW (1-phase and 3-phase 200 V to 240 V, 3-phase 380 to 480 V)
- Cabinet-optimized, IP20 as standard
- Assistant control panel as standard with primary settings for quick operation without a need to scroll through parameter lists
- Integrated and preprogrammed features, such as PID, pump and fan macros, timers
- Integrated EMC C2 filter as standard
- Adjustable switching frequency control reducing motor audible noise
- Built-in Safe Torque Off (STO) to enhance safety
- Options
 - Basic control panel, assistant control panel with Bluetooth capability, industrial assistant control panel
 - Most common fieldbus adapters available
- Remote monitoring with NETA-21
- Safe configuration for unpowered drives
- Supports induction motors, permanent magnet motors and synchronous reluctance motors (SynRM)



ABB DRIVES FOR WATER AND WASTEWATER



Robust design securing optimal flow of water and wastewater

ACQ580

Highlights

- Optimized efficiency for water and wastewater supply and treatment processes
- Enhanced reliability with built in pump protections and application control features
- Proven performance in demanding environments with flexible and robust offering
- Seamless integration and operation, supporting multiple motor types and industry wide communication protocols
- Easy to commission, configure and use with the intuitive Hand-Off-Auto control panel that speaks the industry language

ACQ580 ultra-low harmonic drives

Highlights

- Total Harmonic Distortion (THDi) less than 3%
- Unity Power factor (1.0), even with partial loads
- Ability to boost the output voltage in weak networks
- Everything built in – no external filters or contactors required
- Ride through power quality dips and imbalances without tripping
- Reduces the need for oversized generators and transformers

Features

- Power range:
 - 0.75 to 500 kW (3-phase 380 to 480 V)
 - 0.75 to 75 kW (3-phase 200 – 240 V)
 - 0.37 to 37 kW (1-phase 200 – 240 V)
- Ultra-low harmonic drives power range:
 - 4 to 355 kW (3-phase 380 to 480 V)
- Wall-mounted drives, IP21 as standard (UL type 1), IP55 as option (UL type 12)
- Drive module, IP00 as standard, IP20 as option
- Cabinet-built drives, IP21 as standard, IP42 and IP54 as options
- Built-in pump application program with Intelligent multipump functionality, Sensorless flow calculation, Level control, Soft pipe fill, Quick ramps, Anti-cavitation, Pump cleaning and Pump protection functions
- Adaptive programming for user defined control functions
- Intuitive and easy to use Hand-Off-Auto control panel available also with Bluetooth functionality
- Built-in choke and EMC filter
- Functional safety: Safe Torque Off (STO) as standard
- Extended I/O option modules
- Coated PCBs for humid and harsh environments

ABB DRIVES FOR HVACR

All-compatible HVACR drives family



Complete HVACR functionality in a compact package

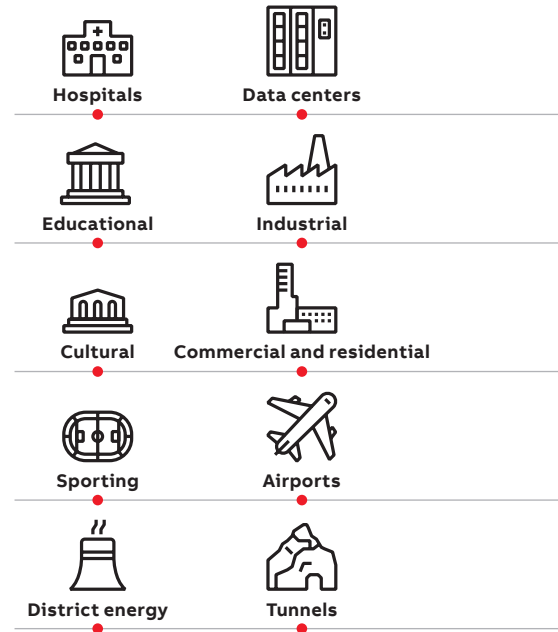
ACH480

Highlights

- Optimized efficiency of HVACR processes
- Enhanced comfort with dedicated HVACR application functionalities
- Designed for panel builders thanks to the drive's compact design and wide operating temperature range
- Seamless integration and operation with wide motor and communication protocol support
- Easy to commission, configure and use with intuitive Hand-Off-Auto control panel that speaks HVACR language

Features

- Power range 0.37 to 22 kW (3-phase 380 to 480 V)
- IP20 as standard, UL type 1 with option
- Built-in EMC filter, category C2
- Built-in HVACR application program with Fireman's override, Intelligent multipump control, Sleep and boost functions, Anti-condensation, Resonance monitoring etc.
- Adaptive programming
- Intuitive and easy to use Hand-Off-Auto control panel available also with Bluetooth functionality
- Functional safety: Safe Torque Off (STO) as standard
- Embedded BACnet MS/TP, Modbus RTU and N2 for easy integration with BMS
- PID controllers for controlling HVACR applications
- Real time clock and built-in timers for timed operation of the drive and external HVACR devices





Pumps

- Heating and cooling substations
- Booster stations
- Fire pumps
- Pool pumps



Fans

- Supply and return fans
- Air handling units
- Fan arrays
- Cooling towers



Compressors

- Chillers
- Heat pumps

Comprehensive climate control for comfortable, safe and energy efficient buildings

ACH580

Highlights

- Optimized efficiency of HVACR processes
- Enhanced comfort with dedicated HVACR application functionalities
- Proven performance in demanding environments with robust drives offering
- Seamless integration and operation with wide motor and communication protocol support
- Easy to commission, configure and use with intuitive Hand-Off-Auto control panel that speaks HVACR language
- Widely available from ABB authorized partners and from ABB regional and central stocks

Features

- Power range:
 - 0.75 to 500 kW (3-phase 380 to 480 V)
 - 0.75 to 75 kW (3-phase 200 to 240 V)
 - 0.37 to 37 kW (1-phase 200 to 240 V)
- Ultra-low harmonic drives power range:
 - 4 to 355 kW (3-phase 380 to 480 V)
- Wall-mounted drives, IP21 as standard (UL type 1), IP55 as option (UL type 12)
- Drive module, IP00 as standard, IP20 as option
- Cabinet-built drives, IP21 as standard, IP42 and IP54 as options
- Built-in choke and EMC filter
- Built-in HVACR application program with Fireman's override, Intelligent multipump control, Sleep and boost functions, Anti-condensation, Resonance monitoring, Active braking (in ULH offering), etc.
- Adaptive programming
- Intuitive and easy to use Hand-Off-Auto control panel available also with Bluetooth functionality
- Functional safety: Safe Torque Off (STO) as standard
- Extended connectivity to I/O
- Embedded BACnet MS/TP, Modbus RTU and N2 for easy integration with BMS
- PID controllers for controlling HVACR applications
- Real time clock and built-in timers for timed operation of the drive and external HVACR devices
- Coated PCBs for humid and harsh environments

ACH580 ultra-low harmonic drives

Highlights

- THDi even less than 3%
- Power factor always 1.0 even with partial loads
- Ability to boost output voltage in weak networks
- Everything built in – no external filters or contactors required

INDUSTRIAL DRIVES

Uncompromised productivity

Experience leading performance and benchmark reliability with ACS880 industrial drives, engineered for heavy use in harsh environments. Ensure precise motor control without encoders, seamless integration with all major automation networks, and flexible customization compatible with virtually any motor type.

Simplify and secure your operations with intuitive installation features, a user-friendly interface, and built-in safety functions. At the core of our ABB Drives offering are advanced energy-saving features, reduced CO₂ emissions, and a durable design that enhances productivity and efficiency.

ALL-COMPATIBLE ACS880 INDUSTRIAL DRIVES



ACS880

Highlights

- Robust, long lifetime design for maximum reliability, even in harsh conditions
- Flexibility in hardware and software enabling superior customization
- Drive-to-drive link for fast communication between drives
- Wide power and voltage range from 0.55 to 6000 kW
- Ready application- and industry-specific solutions
- Precise DTC control for all common motor types
- Communication with all major automation networks
- Integrated safety including Safe Torque Off (STO) as standard with several safety functions as options
- Energy and investment savings with unity power factor of ultra-low harmonic and regenerative drives
- The active supply unit can boost output voltage, ensuring full motor voltage when the supply voltage is below nominal
- Marine approvals from various key classification bodies
- Options include:
 - I/O extension modules
 - Fieldbus adapter modules
 - Integrated safety features
 - Speed feedback interfaces
 - EMC filter, output filters

ACS880 single drives

Highlights

- All the essential features, like brakes, are built in a stand-alone drive
- Compact and ready-to-use unit ensures easy installation for single motor applications in different environments

Features

- IP20: Option (-01, -11, -31)
- IP21: Standard (-01, -11, -31)
- IP22: Standard (-07, -17, -37)
- IP42: Standard (-07CLC, -17/37LC). Option (-07, -17, -37)
- IP54: Option (-07, -17, -37, -07CLC, -17/37LC)
- IP55: Option (-01, -11, -31)
- Flange mounting with IP55 back side protection (-01, -11, -31)
- Wall-mounted single drives, 0.55 to 250 kW, 230 to 690 V
- Cabinet-built single drives, 45 to 2800 kW, 400 to 690 V
- Liquid-cooled cabinet drives, 250 to 6000 kW, 500 to 690 V
- Regenerative and ultra-low harmonic
 - Wall-mounted drives, 2.2 to 110 kW, 400 to 500 V
 - Cabinet-built drives, 45 to 3200 kW, 400 to 690 V

Designed to tackle any of your motor-driven applications, in any industries, whatever the power range



ACS880 drive modules

Highlights

- ACS880 drive modules have been optimized for assembly into the customer's own cabinets
- High power modules have wheels for easy maneuvering
- Side-by-side mounting reduces the required cabinet space
- Flange mounting with IP55 back side protection (-04)
- A large variety of support materials, accessories and assistance available for cabinet design and assembly

Features

- IP00: -x4, -x04, -x04LC
- IP20: -01, -04, -04F, -11, -31, -14, -34
- Wall-mounted single drive modules, 0.55 to 250 kW, 230 to 690 V
- Single drive modules, 200 to 710 kW, 400 to 690 V
- High power single drive module packages, 400 to 2200 kW, 400 to 690 V
- Regenerative and ultra-low harmonic
- Drive modules, 2.2 to 400 kW, 400 to 690 V
- Drive module packages, 160 to 2200 kW, 400 to 690 V
- Multidrive modules
 - Air cooled multidrive modules from 1.5 to 3200 kW, 400 to 690 V
 - Liquid-cooled multidrive modules from 45 to 6000 kW, 400 to 690 V

ACS880 multidrives

Highlights

- Designed for multimotor applications
- The most compact design on the market with side-by-side mounting capability
- Engineered-to-order to meet space- and process requirements
- Drive line-up can be built and installed into straight line, back-to-back, L-, U-, or other shape and layouts
- Highly efficient thermal handling as heat loss of each inverter unit is guided to the back of the cabinet. All cabinets are their own compartments.

Features

- Air cooled
 - IP22 (as standard), IP42 and IP54
 - Power range: 1.5 to 5600 kW, 400 to 690 V
- Liquid cooled
 - IP42 (as standard) and IP54
 - Power range: 45 to 6000 kW, 500 to 690 V
- Inverter units
- Regenerative IGBT supply units
- Regenerative rectifier units (only air cooled)
- Diode supply unit
- DC/DC converter
- Liquid-cooling units
- Braking unit