



Product guide

ABB drives and controls The green guide to more profitable business

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What can you expect from the world's largest drives manufacturer?

Technology is the core of our business. For over 100 years we have invested a significant proportion of our turnover in research and development. As a result, we developed the very first high-power AC drive in the 1970s, and today we offer you the most advanced range of variable speed drives in the world. Still, the cutting edge technology is not the only thing that makes us the global leader in AC and DC drives. You can expect more from us.

A drive is only a part of the solution

Our attention to service matches the technological pursuits of our R&D department. This means a globally local presence, customer service, support, expertise, various tools and a technical partnership to give you added value as a customer, designer or end user.

You can expect us to understand your business, your process and your needs from A to Z. We know by experience how to increase your production capacity, improve your product quality, reduce waste and lower your maintenance costs. Our dedicated experts talk your language and can offer the quickest route to a profitable solution, without forgetting personnel safety and environmental responsibility.

Buy a drive and you get our expertise

The world's leading application engineering organization is at your service. We have a thorough knowledge of all applications from pumps, fans and compressors through to conveyors, extruders, winders and marine applications.

In your plant, our expertise extends across entire electrical installations from correct selection, dimensioning and installation through to operation and maintenance of drives, PLCs, motors, transformers, relays, switches and contactors and all the way to transducers and meters. Optimal choices not only save energy, but also reduce the application's maintenance needs.

For instance, a combination of ABB motors and drives helps minimize the life cycle cost of pumps, fans and other driven machines as well as the entire mechanical installation.

Wherever the drive goes, we are there to support your business

You can expect us to be beside you, wherever you are. Our companies and sales offices are at your service in more than 100 countries, and chances are that one of our authorized value provider companies is probably located right in your neighborhood.

If you are a machine builder, the global ABB can be a vital part of your customer service. You, and your product, are never alone.

So, what can you expect from the world's largest drives manufacturer? Not only the most optimal drive, but the things you really want to be investing in: efficiency, productivity, reliability and safety.



Introduction

Low voltage drives

Motion control drives

DC drives

Medium voltage drives

PLCs

Connectivity and PC tools

Services

The most effective way to a green process is also the most profitable



Benefits of using ABB drives

Substantial energy savings – Rather than have an electric motor running continuously at full speed, an electric drive allows the user to slow down or speed up the motor depending on the demands. Reducing motor speed to meet the actual demand of the process often means substantial energy savings and reduced operating costs.

Optimal process control – An electric drive enables a process to achieve the right speed and torque while maintaining its accuracy – this contributes to a more consistent quality and throughput of the end product.

Reduced need for maintenance – Being able to vary the speed and torque of an electric motor means there is less wear and tear on the motor and the driven machine. For example, the ability to bring a process up to speed slowly prevents the sudden shock loading that can damage the motor and the driven machine over time.

Efficient system upgrade – An electric drive allows for the removal of valves, gears and belts. It also ensures network dimensioning based on a lower starting current.

Functional safety – Most ABB drives offer functional safety features providing safety for machine operators. The features comply with the requirements of the European Union Machinery Directive 2006/42/EC. This directive is associated with standards like EN 62061 (IEC, defining SIL – Safety Integrity Level) and EN ISO 13849-1 (defining PL – Performance Level).

ABB drives common features

Easy to select – Selection can be as simple as choosing the power rating, voltage and current through detailed dimensioning and adding of various options.

Easy to purchase – ABB drives are available from ABB and selected ABB authorized value providers. See the following page for more details about our value provider network.

Easy to install and commission – The drives are simple to install and commission. ABB has developed some of the most advanced control panels and PC tools in the world. The control panels feature plain-language instructions, which can be accessed via soft buttons. This combination, together with a series of Help menus, provides for quick and effective access to all parameters. PC tools provide an easy approach for the selection, commissioning and use of ABB drives.

Easy to use – The drives are designed with the end user in mind, to make it as easy as possible to use our drives. The advanced control panel allows instant adjustments to speed or other application parameters.

Extend your choices by ABB authorized value providers

The ABB authorized value provider network provides more choices and flexibility when buying ABB products and services.

The network members deliver sales, support, service and engineering in seamless cooperation with ABB.

ABB authorized value providers are members of the ABB channel program – the ABB Value Provider Program. They are fully trained, regularly audited and officially authorized to represent the defined ABB products and services. With their in-depth knowledge of local markets and expertise in selected products and services, they can ensure speed, efficiency and consistency in daily operations. Their work ensures that ABB products are backed by the same high standards of service and support all over the world.

Products and services for your specific needs

The multichannel network offers more choices and flexibility to match the local business requirements via globally consistent offering.

Finding your local ABB authorized value providers

To learn more about our unique ABB authorized value providers near you, please visit:

www.abb.com/drivespartners



Channel type	Focused offering	Authorization for
Distributor	Availability	Sales Support (*)
Technical distributor	Product specialist	Sales Support Service (*) Engineering (*)
System integrator	Hardware and software integration	Sales Support Service (*) Engineering
Panel builder	Panel designs	Engineering
Service provider	Life cycle provider	Support Service Engineering (*)

(*) Optional



This label is a sign of quality services from the official members of the ABB Value Provider Program.

Our extensive drives portfolio means the most optimal drive for you

ABB motion control drives

ABB motion control drives offer flexible technologies and high performance motor control to solve a wide variety of applications. The drives enable operation with single and three-phase supplies for global markets, and have open communication options as well as real-time Ethernet technologies such as EtherCAT® and PowerLink. In addition to drives, ABB offers complete motion control solutions, including human-machine interfaces, programmable logic controllers, safety technology, motion controllers and servo motors. All of which seamlessly interface to provide a complete machine control solution.

[ABB motion control drives, pages 32–35](#)

ABB low voltage AC drives

The ABB low voltage AC drives product range, from 0.18 to 5600 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.

ABB micro drives

ABB micro drives are suitable for a variety of low power applications such as pumps, fans and conveyors. The focus in the design has been the easy integration into machines, which provides flexible mounting alternatives and straightforward commissioning.

ABB general purpose drives

ABB general purpose drives are ideal in situations where there is a need for a drive that is easy to install, commission and use. They are designed to offer control over a broad range of standard drive applications and have a wide range of built-in features simplifying all operations.

ABB machinery drives

ABB machinery drives can be flexibly configured to meet demands set by different machines. An order-based configuration is an integral part of the machinery drives offering. The drives have a broad range of standard and optional features. Their programming capability offers additional flexibility to meet challenging machine requirements.

ABB industrial drives

ABB industrial drives are highly flexible AC drives that can be customized to meet the precise needs of industrial applications. The drives cover a wide power and voltage range up to 5600 kW and 690 V. The drives are designed for heavy industrial applications such as those found in pulp and paper, metals, mining, cement, power, chemical, oil and gas, water and wastewater, and food and beverage. Drives adapted and approved for use in marine environment are also included in this drives family.

Industry specific drives

The industry specific ABB drives provide customers with dedicated drive solutions for AC motor control used in industries such as HVAC as well as water and wastewater.

[ABB low voltage AC drives, pages 10–31](#)

ABB's programmable logic controllers (PLCs)

ABB offers a comprehensive range of scalable, powerful PLCs and robust HMI control panels. The PLC range starts with the affordable AC500-eCo. AC500 is the powerful flagship PLC, offering a wide range of performance levels. High availability configurations are easy to implement. For eXtreme Conditions like in marine, wind, solar, vibrating machines and waste water treatment, the AC500-XC series is the first choice. PS501 Control Builder Plus is the effortless, straightforward engineering tool for PLC, drives, HMI and internet services.

[ABB's programmable logic controllers, pages 46–51](#)

ABB DC drives

ABB's DC drives portfolio, from 9 to 18000 kW, provides the highest power-to-size ratio on the market. The drives are designed for most industries and applications including metals, cement, mining, pulp and paper, printing, food and beverage, wire manufacturing, and test rigs. ABB DC drives are available as complete cabinets, modules for cabinet assembly, and retrofit kits.

The DC drives feature auto-tuning capabilities. Intuitive user software minimizes startup time and improves daily operation. This helps to increase process productivity and improve production quality.

ABB standard drives

With compact dimensions and robust technology, ABB standard drives are an ideal solution for any machinery and OEM manufacturer as a new installation or a replacement for older analog devices.

ABB industrial drives

ABB industrial drives are designed for all industrial applications. The fast drive-to-drive DCS link is designed for demanding high power 12-pulse applications, as well as smart master-follower configurations. ABB industrial drives are available both as complete enclosed DC drives and as converter modules to meet the requirements of the users, OEMs and system integrators. These drives are highly flexible and they can be configured to meet the precise needs of industrial applications.

[ABB DC drives, pages 36–39](#)

ABB medium voltage AC drives

ABB offers an extensive portfolio of variable speed drives and soft starters for medium voltage applications with a power range from 250 kW to over 100 MW.

ABB medium voltage drives are used in a wide range of applications in industries such as metals, marine, mining, cement, power, chemical, oil, gas, water and wastewater.

The drives are equipped with air or water cooling and with different line supply connection options. Some products come with an integrated input transformer or with the capability to operate direct-to-line without an input transformer, and therefore minimize both, weight and space.

ABB general purpose drives

General purpose drives are used to control standard motors. These motors are typically used to drive applications such as pumps, fans, compressors, mixers, mills and conveyors.

ABB special purpose drives

Special purpose drives are engineered drives, typically used for high power, high speed or special performance applications such as test stands, marine propulsion and thrusters, rolling mills, SAG and ball mills, large pumps, fans and compressors.

[ABB medium voltage AC drives, pages 40–45](#)





Low voltage drives

The ABB low voltage AC drives product range, from 0.18 to 5600 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.

ABB micro drives for basic applications

ABB micro drives are very easy to install and set up. They provide flexible mounting alternatives and straightforward configuration for many basic applications. Each drive is tested before it leaves the factory providing high machine availability. Where ever the micro drives are delivered and installed the local ABB will be there to support your business.

Series ACS55

- The drive works with single phase power and is suitable for domestic environments as standard
- DriveConfig kit enables drive set up without a power connection to the drive



Little big drives easy to set up using switches

Series ACS150

- A more advanced micro drive with functions such as PID control, a built-in brake chopper and EMC filter
- Integrated user interface and a speed control potentiometer
- The drive is available for both single and three-phase supplies



Little big drives with a wider power range and functionality

Series ACS55

- Power range 0.18 to 0.37 kW (1-phase 100 to 120 V)
- Power range 0.18 to 2.2 kW (1-phase 200 to 240 V)
- IP20 enclosure (UL open)
- For basic machinery applications
- Scalar control
- Entry-level product for new users
- Suitable for domestic networks as standard
- Parameter setting by switches or by PC software
- Built-in EMC filter for 1st environment
- Options
 - DriveConfig kit PC tool, potentiometer
 - Input and output chokes

For further information, see catalog "ABB micro drives, ACS55, 0.18 to 2.2 kW", code: 3AFE68899842 EN.

Series ACS150

- Power range 0.37 to 2.2 kW (1-phase/ 3-phase 200 to 240 V)
- Power range 0.37 to 4 kW (3-phase 380 to 480 V)
- IP20 enclosure, optional NEMA 1 kit
- For basic machinery applications
- Scalar control
- Integrated user interface and potentiometer
- Built-in brake chopper
- Built-in EMC filter for 2nd environment
- Options
 - External EMC filter for 1st/2nd environment
 - Input and output chokes
 - FlashDrop tool for unpowered drive configuration in 2 seconds

For further information, see catalog "ABB micro drives, ACS150, 0.37 kW to 4 kW", code: 3AFE68596114 EN.



About 70 percent of electricity consumed by industry is used to run electric motors.

ABB general purpose drives offer ease-of-use

ABB general purpose drives are designed to control a wide range of applications such as pumps, fans, conveyors and mixers, as well as process control in industries including material handling, food and beverage, chemical, rubber and plastics, textile and printing. The drives are easy to select, install, configure and use, saving considerable time as most features are built-in as standard.

Series ACS310

- Designed for pump and fan applications, such as booster pumps and process ventilation
- Compact dimensions with unified height and depth save space and facilitate cabinet installations
- Equipped with pump and fan control (PFC), PID control with booster functionality and pump protection function to optimize pump or fan flow, to cut maintenance costs and to save energy



Built-in features
for pump and fan
applications

Series ACS550

- Wide power range and vector control for variable and constant torque applications from pumps and fans to conveyors and mixers
- Many built-in features including an EMC filter for 1st environment, a Modbus interface and a swinging choke enhance drive performance and help reduce the space needed for installation
- Intuitive control panel and assistant functionality for fast set up and commissioning



A wide power
range for a
broad range of
industries

Series ACS310

- Power range 0.37 to 2.2 kW (1-phase 200 to 240 V), 0.37 to 11 kW (3-phase 200 to 240 V)
- Power range 0.37 to 22 kW (3-phase 380 to 480 V)
- IP20 enclosure, optional NEMA 1 kit
- Built-in pump and fan features such as multi-pump control, pipe clean and fill functions
- Embedded Modbus EIA-485
- Options
 - Basic and assistant control panels
 - Input and output chokes
 - Relay output extension module
 - External EMC filter for 1st environment
 - FlashDrop tool for unpowered drive configuration in 2 seconds

For further information, see catalog "ABB general purpose drives, ACS310, 0.37 to 22 kW", code: 3AUA0000051082 EN.

Series ACS550

- Power range 0.75 to 355 kW (3-phase 208 to 240 V, 380 to 480 V)
- Wall-mounted drives, IP21 as standard (UL type 1), IP54 as option (UL type 12 in frame sizes R1-R6)
- Vector control
- Built-in EMC filter and Modbus fieldbus interface
- Swinging choke for superior harmonic reduction
- Options
 - Basic control and assistant control panel
 - Plug-in fieldbus adapters, panel mounting kits, relay output extension module
 - Output chokes
 - Brake units and choppers
 - FlashDrop tool for unpowered drive configuration in 2 seconds

For further information, see catalog "ABB general purpose drives, ACS550, 0.75 to 355 kW", code: 3AFE64792857 EN.

ABB machinery drives for flexible needs

ABB machinery drives are designed to meet the production and performance needs of machine builders, system integrators, panel builders and end users in a broad range of applications. The drives can be flexibly programmed to meet the demands of different machine solutions. A wide range of features and options provide optimal solutions.

Series ACS355

- A compact drive with a wide range of built-in features including safety functionality
- Sequence programming provides an easy way to implement drive's control logic
- A wide range of options for enhanced performance and flexible connectivity to different processes
- Compact dimensions with unified height and depth save space and facilitate cabinet installations



Compact and easy drives to install, set and commission

Series ACS850

- Covers a wide power and voltage range, and provides a variety of standard and optional features making adaptation to different applications easy
- The standard control program can be easily modified to meet specific application needs and function block programming provides additional flexibility
- Equipped with direct torque control (DTC) providing highly accurate open and closed loop control for different types of motors



Flexibility and scalability for machinery applications

Series ACS355

- Power range 0.37 to 2.2 kW (1-phase 200 to 240 V), 0.37 to 11 kW (3-phase 200 to 240 V)
- Power range 0.37 to 22 kW (3-phase 380 to 480 V)
- IP20 enclosure, optional NEMA 1 kit
- IP66, IP67 or IP69K as optional variant up to 7.5 kW
- Scalar control, open and closed loop vector control
- Advanced functionality with sequence programming
- Induction and permanent magnet motor control
- Built-in brake chopper and EMC filter for 2nd environment
- Integrated safe torque-off (STO) as standard
- Options
 - Basic and assistant control panels
 - Potentiometer, plug-in fieldbus adapters, encoder interface, relay output extension module, input and output chokes
 - External EMC filter for 1st environment
 - FlashDrop tool for unpowered drive configuration in 2 seconds

For further information, see catalog "ABB machinery drives, ACS355, 0.37 to 22 kW", code:3AUA0000068569 EN.

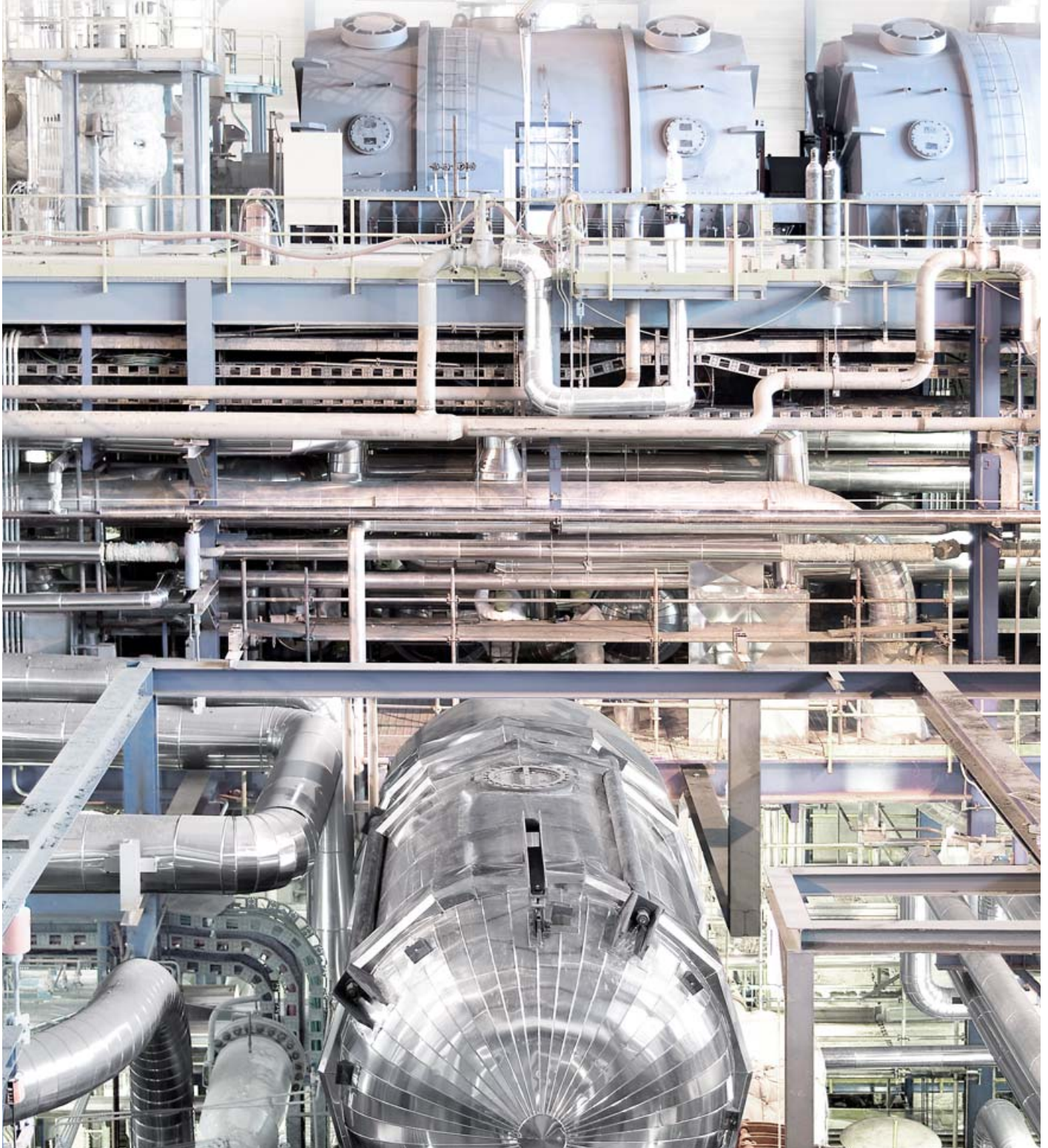
Series ACS850

- Power range 0.37 to 560 kW (380 to 500 V)
- IP20 as standard
- Compact size and side-by-side mounting save space in cabinets
- Built-in input chokes for harmonic filtering
- Built-in braking chopper up to 45 kW as standard
- Induction, permanent magnet and synchronous reluctance motor control
- Extensive input and output connectivity as standard
- Integrated safe torque-off (STO) as standard
- Removable memory unit for easy drive management
- Options
 - Fieldbus adapter, I/O extension and feedback interface modules
 - PC tools: DriveStudio for startup, tuning and programming, DriveSPC for modifying and extending functionality
 - Synchronous reluctance motor and drive packages
 - Crane control program for stand-alone cranes
 - EMC filters, braking options, du/dt filters

For further information, see catalog "ABB machinery drives, ACS850, 0.37 to 560 kW", code: 3AUA0000041481 EN

ABB industrial drives for comprehensive solutions for all industries

ABB industrial drives are highly flexible AC drives that can be customized to meet the precise needs of industrial applications. The drives cover a wide power and voltage range, including voltages up to 690 V and powers up to 5600 kW. At the core of the drives is the direct torque control (DTC), ABB's premium motor control technology that enables highly accurate open and closed loop control. The drives are designed for industrial applications such as those found in pulp and paper, metals, mining, cement, power, chemical, oil and gas, water and wastewater, and food and beverage. Drives adapted and approved for use in the marine environment are also included within this drives family. ABB industrial drives are available in different constructions: wall-mounted, free-standing, cabinet-built drives, multidrives and drive modules.



ACS800 series, wall-mounted and free-standing single drives

Single drives are complete AC drives, which can be installed without any additional cabinet or enclosure. A single drive configuration contains a rectifier, optional EMC filter, reactor, DC link and an inverter in one single AC drive unit. Single drives are available as wall-mounted, free-standing and cabinet-built constructions. The key features of these drives are programmability and configurability during both ordering and commissioning, which makes adaptation to different applications easy.

Series ACS800-01, wall-mounted drives

- Compact wall-mounted drives with all important features built into the drive, saving installation space and time
- Standard features include a choke for harmonic filtering and drive protection, extensive and flexible I/O, a control panel for easy access to drive settings and a silent long lifetime cooling fan
- A wide range of options and software alternatives enable optimal solutions for different applications



Wall-mounted industrial drives with everything built-in

Series ACS800-11, regenerative drives, wall-mounted

- All functions of a regenerative drive, such as an active supply, a LCL line filter and a charging circuitry, integrated inside the drive
- Regenerative drives save energy compared to other braking methods as energy is fed back to the network
- Extensive range of built-in features and options for optimal solutions to different applications



Complete regenerative drives in a compact package

Series ACS800-01, wall-mounted drives

- Power range 0.55 to 200 kW (230 to 690 V)
- 6-pulse wall-mounted drives, IP21 as standard (UL type 1), IP55 as option (UL type 12)
- Built-in harmonic filtering choke
- High performance and overload capacity for all applications
 - Reliable and full-featured drive
 - Startup assistant
- Direct torque control (DTC) for high performance motor control
- Built-in options
 - I/O extension modules
 - Fieldbus adapter modules
 - Pulse encoder and fiber optic link module
 - EMC filter, braking chopper
 - Marine type approved design

For further information, see catalog "ABB industrial drives, ACS800, single drives, 0.55 to 5600 kW", code: 3AFE68375126 EN.

For further information about the ACS800 marine type approved design, see catalog "ABB drives for marine applications, ACS800-01/-04/-07LC, -17LC, -37LC, 0.55 to 5600 kW", code: 3AFE68326753 EN.

Series ACS800-11, regenerative drives, wall-mounted

- Power range 5.5 to 110 kW (230 to 690 V)
- Regenerative wall-mounted drives, IP21 as standard (UL type 1)
- Built-in active rectifier and LCL filter for distortionless regenerative operation
- Advanced regenerative drive in one package
 - Complete full-performance drive
 - Built-in application know-how in software solutions
 - Startup assistant
- Direct torque control (DTC) for high performance motor control
- Built-in options
 - I/O extension modules
 - Fieldbus adapter modules
 - Pulse encoder and fiber optic link module
 - EMC filter

For further information, see catalog "ABB industrial drives, ACS800, single drives, 0.55 to 5600 kW", code: 3AFE68375126 EN.

ACS800 series, wall-mounted and free-standing single drives

Series ACS800-31, low harmonic drives, wall-mounted

- Harmonic issues eliminated without the need for additional filtering equipment or complicated multi-pulse transformer arrangements
- Active supply unit and low harmonic line filter integrated in the drive, resulting in less cabling and installation on site
- Extensive range of built-in features and options for optimal solutions to different applications



Tackling effects of harmonics with a compact drive

Series ACS800-02, free-standing drive

- Narrow free-standing drives for compact installations
- Drives also allow side-by-side or sideways (flat type) installations
- The drives feature a wide range of standard features including a choke for harmonic filtering and drive protection, extensive and flexible I/O, a control panel for easy access to drive settings and a silent, long lifetime cooling fan
- A broad range of built-in features and options for optimal solutions to different applications



Free-standing drive for narrow bookshelf installations

Series ACS800-31, low harmonic drives, wall-mounted

- Power range 5.5 to 110 kW (230 to 690 V)
- Wall-mounted low harmonic drives, IP21 as standard (UL type 1)
- Complete drive package
- Total current distortion less than 5%
- Power factor as unity
- Direct torque control (DTC) for high performance motor control
- Easy startup
 - Plug and play
 - Startup assistance
- Built-in options according to ACS800 series

For further information, see catalog "ABB industrial drives, ACS800, single drives, 0.55 to 5600 kW", code: 3AFE68375126 EN.

Series ACS800-02, free-standing drive

- Power range 45 to 560 kW (230 to 690 V)
- 6-pulse free standing drives, IP21 as standard (UL type 1)
- Ultra compact drive
 - Everything inside
 - Two mounting directions
 - Narrow design
- Direct torque control (DTC) for high performance motor control
- Enclosure extension (option)
 - For options such as contactor and motor thermal protection
 - Fuse switch as standard

For further information, see catalog "ABB industrial drives, ACS800, single drives, 0.55 to 5600 kW", code: 3AFE68375126 EN.

ACS800 series, cabinet-built single drives

ABB's cabinet-built single drives are drives that are mounted into a cabinet and the complete assembly is offered and delivered as one package. Often the cabinet will include additional accessories such as contactors and earth fault protection units. Cabinet drives are typically made-to-order products.

Series ACS800-07, cabinet-built single drives

- Robust design based on a compact single module including rectifier and inverter
- A wide range of standardized configurations and application engineering available for customized solutions
- Extensive range of built-in features and options



Robust and flexible single drives for heavy industrial applications

Series ACS800-07, cabinet-built single drives

- Power range 45 to 2800 kW (380 to 690 V)
- IP21 as standard, IP22, IP42 (UL type 1), IP54 and IP54R as option (UL type 12)
- 6/12-pulse cabinet-built drives
 - Rugged drive for demanding applications
 - Reliable and easy to use
 - Wide range of powers and voltages
- Compact and modular design
- Direct torque control (DTC) for high performance motor control
- Customized solutions
 - Preconfigured or order-based solutions by application engineering
 - Industry-specific hardware and software solutions
 - Marine type approved design

For further information, see catalog "ABB industrial drives, ACS800, single drives, 0.55 to 5600 kW", code: 3AFE68375126 EN.

With direct torque control (DTC) there is no need for motor feedback in 95% of applications.

ACS800 series, cabinet-built single drives

Series ACS800-07LC, liquid-cooled cabinet-built single drives

- A fully enclosed drive cabinet with direct liquid cooling optimized for harsh environmental conditions
- Extremely compact, customizable and reliable design for a broad range of medium and high power applications
- High availability delivered with features such as built-in redundancy and the ability to run a partial load even when one of the modules is not operating



High availability
in harsh
environmental
conditions

Series ACS800-17, regenerative drives, cabinet-built

- Complete regenerative drive in a single, compact and customizable package
- Regenerative drives save energy compared to other braking methods as energy is fed back to the network
- Especially suitable for demanding applications with fast transition between motoring and generating that benefit from the DTC control method



Regenerative
drives for energy
conservation
in demanding
applications

Series ACS800-07LC, liquid-cooled single drives, cabinet-built

- Power range 200 to 5600 kW (380 to 690 V)
- Fully enclosed cabinet, IP42 as standard, IP54 as option
- Liquid-cooled cabinet-built drives for harsh conditions
 - Compact size
 - Fully enclosed cabinet
 - 98% of heat dissipation through coolant, no additional air conditioning needed
- Direct torque control (DTC) for high performance motor control
- Customized solutions
 - Preconfigured or order-based solutions by application engineering
 - Industry and marine specific hardware and software solutions
 - Marine type approved design

For further information about the ACS800 marine type approved design, see catalog “ABB drives for marine applications, ACS800-01/-04/-07LC, -17LC, -37LC, 0.55 to 5600 kW”, code: 3AFE68326753 EN.

Series ACS800-17, regenerative drives, cabinet-built

- Power range 45 to 2500 kW (380 to 690 V)
- IP21 as standard, IP22, IP42 (UL type 1), IP54 and IP54R as option (UL type 12)
- Advanced regenerative drive in one package
 - Complete full-performance drive
 - Direct torque control (DTC) for high performance motor control
 - Easy startup
- Customized solutions
 - Preconfigured or order-based solutions by application engineering
 - Industry and marine specific hardware and software solutions
 - Marine type approved design

For further information, see catalog “ABB industrial drives, ACS800, single drives, 0.55 to 5600 kW”, code: 3AFE68375126 EN.

Series ACS800-17LC, liquid-cooled cabinet-built regenerative single drives

- Combines the benefits of direct liquid cooling and regenerative operation to deliver an extremely compact, efficient and silent drive that helps to conserve energy
- High availability delivered with features such as built-in redundancy and the ability to run a partial load even when one of the modules is not operating
- Extensive range of built-in features and options enable optimal solutions for different applications



Benefits of liquid cooling and regenerative supply in a compact package

Series ACS800-37, cabinet-built low harmonic drives

- Enables exceptionally low harmonic content in the network with a total current distortion of less than 5.0%
- Active supply unit and low harmonic line filter integrated in the drive, resulting in less cabling and installation on site
- Extensive range of built-in features and options enable optimal solutions for different applications



Tackling effects of harmonics with a comprehensive drive solution

Series ACS800-17LC, liquid-cooled regenerative single drives, cabinet-built

- Power range 55 to 5200 kW (380 to 690 V)
- Fully enclosed cabinet, IP42 as standard, IP54 as option
- Liquid-cooled regenerative cabinet-built drives
 - 98% of heat dissipation through coolant, no additional air conditioning needed
 - Fully enclosed cabinet
 - Rugged design
 - Silent operation
- Direct torque control (DTC) for high performance motor control
- Customized solutions
 - Preconfigured or order-based solutions by application engineering
 - Industry and marine specific hardware and software solutions
 - Marine type approved design

For further information about the ACS800 marine type approved design, see catalog "ABB drives for marine applications, ACS800-01/-04/-07LC, -17LC, -37LC, 0.55 to 5600 kW", code: 3AFE68326753 EN.

Series ACS800-37, cabinet-built low harmonic drives

- Power range 45 to 2700 kW (380 to 690 V)
- IP21 as standard, IP22, IP42 (UL type 1), IP54 and IP54R as option (UL type 12)
- Cabinet-built low harmonic drives
- Minimal network distortion
- Power factor as unity
- Direct torque control (DTC) for high performance motor control
- Easy startup
 - Plug and play
 - Startup assistant
- Customized solutions
 - Preconfigured and order-based solutions by application engineering
 - Marine type approved design

For further information, see catalog "ABB industrial drives, ACS800, single drives, 0.55 to 5600 kW", code: 3AFE68375126 EN.

ACS800 series, cabinet-built single drives

Series ACS800-37LC, cabinet-built liquid-cooled low harmonic single drives

- Combining the benefits of direct liquid cooling and low harmonic drive for an extremely compact and efficient drive that eliminates harmonic issues
- Enables exceptionally low harmonic content in the network with a total current distortion of less than 5.0%
- Extensive range of built-in features and options for optimal solutions to different applications



Tackling effects
of harmonics
together with
efficient
liquid cooling

Series ACS800-37LC, cabinet-built liquid-cooled low harmonic single drives

- Power range 55 to 5200 kW (380 to 690 V)
- Fully enclosed cabinet, IP42 as standard, IP54 as option
- Liquid-cooled low harmonic cabinet-built drives
 - Fully enclosed cabinet
 - Rugged design
 - Low noise level
- Direct torque control (DTC) for high performance motor control
- Low harmonic content exceeding the requirements of IEEE519 standard
- Customized solutions
 - Preconfigured and order-based solutions by application engineering
 - Marine type approved design

For further information, see catalog “ABB industrial drives, ACS800, single drives, 0.55 to 5600 kW”, code: 3AFE68375126 EN.

For further information about the ACS800 marine type approved design, see catalog “ABB drives for marine applications, ACS800-01/-04/-07LC, -17LC, -37LC, 0.55 to 5600 kW”, code: 3AFE68326753 EN.

The greenest energy is
the energy that is saved
and not used at all.



ACS800 series, multidrives

ABB's multidrives are built from ABB industrial drive modules connected to a common DC bus. This enables a single power entry and common braking resources for several drives.

This construction simplifies the total installation and results in many benefits including savings in cabling, reduced installation and maintenance costs, reduced line currents and more.

Series ACS800, air-cooled multidrives

- Flexible and compact multidrive configurations for a broad range of industrial processes
- Extensive programmability and optional control programs for a wide range of applications
- Designed for easy installation, commissioning and maintenance

Comprehensive
and efficient
process control



Series ACS800, air-cooled multidrives

- Power range 1.1 to 5600 kW (380 to 690 V)
- IP21 as standard, IP22, IP42 (UL type 1), and IP54 as option (UL type 12)
- Common DC busbar
- Single power line connection
- Shared energy and motor-to-motor braking without braking chopper or regenerative supply unit
- Reduced line current
- Common braking resourced to several drives
- Does not require the use of a separate MCC
- Savings in cabling, installation and maintenance costs

An ABB multidrive is made up of several different units. These sections are called multidrive units and the most important ones are:

- Inverter units, ACS800-107
- Regenerative IGBT supply units, ACS800-207
- Diode supply units, 6- and 12-pulse ACS800-307 and -507
- Regenerative thyristor supply units, 6- and 12-pulse ACS800-407 and -807
- Braking unit, ACS800-607
- Control units as an option

Series ACS800, liquid-cooled multidrives

- Direct liquid cooling and robust design with fully enclosed cabinet for applications where space savings and silent operation is a must. No need for air conditioning in the electrical rooms.
- Flexible multidrive configurations for a broad range of heavy industrial processes
- Extensive programmability and optional control programs for a wide range of applications
- Designed for easy installation, commissioning and maintenance

Liquid-cooled
process control
in a compact
package



Series ACS800, liquid-cooled multidrives

- Power range 1.1 to 5600 kW (380 to 690 V)
- Fully enclosed cabinet, IP42 as standard, IP54 as option
- Common DC busbar
- Fully enclosed cabinet
- For harsh environments
- Silent operation
- Compact size
- Customized solutions
 - Industry and marine specific hardware and software solutions
 - Marine type approved design

Liquid-cooled multidrive units:

- Inverter units, ACS800-107LC
- Regenerative IGBT supply units, ACS800-207LC
- Diode supply units, 6-pulse ACS800-307LC, 12-pulse ACS800-507LC, 18-pulse ACS800-1107LC and 24-pulse ACS800-1207LC
- Liquid-cooling unit, ACS800-1007LC
- Braking unit, ACS800-607LC

For further information, see the catalog "ABB industrial drives, ACS800, multidrives, 1.1 to 5600 kW", code: 3AFE68248531 EN.

For further information about the ACS800 marine type approved design, see catalog "ABB drives for marine applications, ACS800-01/-04/-07LC, -17LC, -37LC, 0.55 to 5600 kW", code: 3AFE68326753 EN.

ACS800 series, single drive modules

ABB's single drive modules are designed for fast, cost-effective installation and integration into a customer's own cabinet. Modules enable OEMs, system integrators and panel builders to build their own drive while benefitting from ABB drives' technology such as DTC motor control, adaptive programming and a wide range of built-in and external options. ABB provides detailed cabinet installation instructions and other support material to help customers build their own solutions.

Series ACS800-04 and ACS800-04LC

- Drive modules have been designed to minimize cabinet space use, make assembly as easy as possible, and give maximum flexibility
- All drive modules, regardless of the power and voltage, have the same customer interface and I/O making system design and training easier
- Everything necessary comes built-in and a wide selection of different I/O and communications options is available. Also, liquid-cooled drive modules are available to meet higher power requirements



Compact drive modules optimized for cabinet assembly

Series ACS800-14

- Regenerative single drive modules equipped with an active supply unit and optimized for cabinet assembly
- All important features and options, including LCL line filter module(s), IGBT supply module(s), inverter module(s), common mode filters, come in the package
- All modules, regardless of the power and voltage, have the same customer interface and I/O making system design and training easier



Drive modules with regenerative supply for energy savings

Series ACS800-04 and ACS800-04LC

- Air-cooled power range 0.55 to 1900 kW (230 to 690 V)
- Liquid-cooled power range 200 to 2240 kW (380 to 690 V)
- IP00, IP20
- Optimized design for cabinet assembly
- Compact and modular design allowing a wide range of variants
- Easy cabling
- EMC compliant modules available
- Wide range of built-in options
- Marine type approved design

For further information, see catalog "ABB industrial drives, ACS800, drive modules, 0.55 to 2900 kW", code: 3AFE68404592 EN.

For further information about the ACS800 marine type approved design, see catalog "ABB drives for marine applications, ACS800-01/-04/-07LC, -17LC, -37LC, 0.55 to 5600 kW", code: 3AFE68326753 EN.

Series ACS800-14

- Power range 75 to 1700 kW (380 to 690 V)
- IP00
- Optimized design for cabinet assembly
- Compact and modular design allowing a wide range of variants
- Long lifetime cooling fan and capacitors
- Separate controllers for galvanic isolation
- Active supply unit can be configured for low harmonic mode (2 to 4% harmonic distortion) or regenerative mode for better dynamic performance
- Assembly kits for Rittal cabinets and generic cabinets

For further information, see catalog "ABB industrial drives, ACS800, drive modules, 0.55 to 2900 kW", code: 3AFE68404592 EN.

ACS800 series, multidrive modules

ABB's multidrive modules are designed to be installed in cabinets that feature a common DC bus. They are available as inverter modules, supply modules and braking choppers and resistors, and cover a wide range of applications. These modules contain all the drive technology and different types of supply units that convert the AC supply from the mains into a DC supply for the inverter modules. ABB provides full engineering support for designing cabinets.



Inverter units ACS800-104 and ACS800-104LC

- Air-cooled power range 1.1 to 2900 kW (380 to 690 V)
- Liquid-cooled power range 1.1 to 2240 kW (380 to 690 V)

Diode supply units ACS800-304 (6-pulse), ACS800-704 (6-/12-pulse), ACS800-304LC and ACS800-704LC

- Air-cooled power range 145 to 4200 kW (380 to 690 V)
- Liquid-cooled power range 300 to 3650 kW (380 to 690 V)

Thyristor supply units ACS800-404

- Power range 470 to 3150 kW (380 to 690 V)
- Provide regenerative capacity

IGBT supply units ACS800-204 + LCL filters and ACS800-204LC + LCL filters

- Air-cooled range is from 2.2 to 2900 kW
- Liquid-cooled power range 181 to 2370 kW (380 to 690 V)
- Provides regenerative capacity plus additional filtering of harmonics in the supply

For further information, see catalog "ABB industrial drives, ACS800, drive modules, 0.55 to 2900 kW", code: 3AFE68404592 EN.





ACS880 series, all-compatible ABB industrial drives

– Simplifying your world without limiting your possibilities

The ACS880 series drives introduce a new generation of industrial drives. These drives are easily adaptable to suit different customer needs and integrate into various industry solutions. The drives are part of ABB's new all-compatible drives portfolio that is designed to provide customers across industries and applications with unprecedented levels of compatibility, flexibility and ease of use. The new ACS880 industrial drives are compatible with virtually all types of processes, automation systems, user groups and business requirements. Yet, despite the drives' wide-ranging capabilities, they are remarkably easy to use and integrate.

The ACS880 drives offering will grow alongside with the ACS800 drives. They are available as single drives, multidrives and drive modules.

Introduction

Low voltage drives

Motion control drives

DC drives

Medium voltage drives

PLCs

Connectivity and PC tools

Services

ACS880 series, all-compatible ABB industrial drives

Series ACS880-01, wall-mounted drives

- Compact wall-mounted drives with all important features built-in the drive, saving installation space and time
- Premium motor control with direct torque control (DTC) for virtually any type of AC motor, including permanent magnet motors
- A broad range of options offer flexibility and universal connectivity
- Built on ABB's all-compatible drives architecture providing unprecedented levels of compatibility, flexibility and ease-of-use



All-compatible
wall-mounted
drive with
everything built in

Series ACS880-07, cabinet-built single drives

- Cabinet-built drives with a wide range of standard and optional features all built inside the cabinet, saving installation space and time
- Premium motor control with direct torque control (DTC) for virtually any type of AC motor, including permanent magnet motors
- Flexible connectivity and an extensive range of options for the optimum solution to different applications
- Built on ABB's all-compatible drives architecture providing unprecedented levels of compatibility, flexibility and ease-of-use



All-compatible
drive cabinet
tailored to
customer needs

Series ACS880-01, wall-mounted drives

- Power range 0.55 to 250 kW (208 to 690 V)
- IP21 as standard (UL type 1), IP55 as option (UL type 12)
- Integrated safety including safe torque-off (STO) as standard with several safety functions as options
- Intuitive control panel with USB connection and support up to 20 languages
- Common PC tool, Drive composer, for commissioning and configuration
- Drive-to-drive link for fast communication between drives including master-follower configurations without any additional software
- Removable memory unit for easy setup and maintenance
- Drive's energy efficiency information and the energy optimizer feature help to improve process efficiency
- Options include:
 - I/O extension modules
 - Fieldbus adapter modules
 - Safety functions module
 - Speed feedback interfaces
 - EMC filter, braking chopper

For further information, see catalog "ABB industrial drives, ACS880, single drives, 0.55 to 250 kW", code: 3AUA0000098111 EN.

Series ACS880-07, cabinet-built single drives

- Power range 45 to 250 kW (380 to 500 V)
- Degree of protection, IP22 as standard, IP42 and IP54 as options (UL type 12)
- Integrated safety including safe torque-off (STO) as standard with several safety functions as options
- Intuitive control panel with USB connection and support up to 20 languages
- Common PC tool, Drive composer, for commissioning and configuration
- Drive-to-drive link for fast communication between drives, including master-follower configurations without any additional software
- Removable memory unit for easy setup and maintenance
- Drive's energy efficiency information and the energy optimizer feature help to improve process efficiency
- Options include:
 - I/O extension modules
 - Fieldbus adapter modules
 - Safety functions module
 - Speed feedback interfaces
 - EMC filter, braking chopper

For further information, see catalog "ABB industrial drives, ACS880, single drives, 0.55 to 250 kW", code: 3AUA0000098111 EN.

Series ACS880, multidrives

- Single supply and DC bus arrangement with several inverters reduce line power and system size
- Premium motor control with DTC for virtually any type of AC motor, including permanent magnet motors
- A wide range of built-in features, flexible connectivity and an extensive range of options for the optimum solution to different applications
- Built on ABB's all-compatible drives architecture providing unprecedented levels of compatibility, flexibility and ease-of-use



All-compatible
space-saving
multidrives

Series ACS880, drive modules

- Compact design for easy cabinet assembly and maintenance
- Mechanical and electrical kit accessories including 3D images and assembly drawings
- EPLAN electric macros
- Built on ABB's all-compatible drives architecture providing unprecedented levels of compatibility, flexibility and ease-of-use



All-compatible drive
modules for easy
cabinet assembly

Series ACS880, multidrives

- Power range 1.5 to 250 kW (380 to 500 V)
- Degree of protection, IP22 as standard, IP42 and IP54 as options (UL type 12)
- Integrated safety including safe torque-off (STO) as standard with several safety functions as options
- High packing density with 16 inverter units up to frame size R2i can be installed into one cabinet
- Fast connectors for motor cables located in the bottom part
- DC fuse disconnectors, DC fuses or DC fuse switch including charging circuit for inverters
- Highly efficient thermal handling – heat loss of each inverter unit is guided to the back of the cabinets.
- Intuitive control panel with USB connection and support up to 20 languages
- Common PC tool, Drive composer, for commissioning and configuration
- Drive-to-drive link for fast communication between drives including master-follower configurations without any additional software
- Removable memory unit for easy setup and maintenance
- Drive's energy efficiency information and the energy optimizer feature help to improve process efficiency
- Options include:
 - I/O extension modules
 - Fieldbus adapter modules
 - Safety functions module
 - Speed feedback interfaces
 - EMC filter, braking chopper

Series ACS880, drive modules

- Power range 1.5 to 250 kW (380 to 500 V)
- Integrated safety including safe torque-off (STO) as standard with several safety functions as options
- Common PC tool, Drive composer, for commissioning and configuration
- Drive-to-drive link for fast communication between drives including master-follower configurations without any additional software
- Removable memory unit for easy setup and maintenance
- Drive's energy efficiency information and the energy optimizer feature help to improve process efficiency
- Options include:
 - I/O extension modules
 - Fieldbus adapter modules
 - Safety functions module
 - Speed feedback interfaces
 - Braking chopper

For further information, see catalog "ABB industrial drives, ACS880, drive modules, 1.5 to 250 kW", code: 3AUA0000115038 EN.

For further information, see catalog "ABB industrial drives, ACS880, multidrives, 1.5 to 250 kW", code: 3AUA0000115037 EN.

ABB's industry specific drives tailored to save time and money

ABB industry specific drives provide our customers with dedicated drive solutions for AC motor control used in industries such as HVAC and water and wastewater. Working closely with these industries, we have developed targeted functionality to help you improve your overall operating performance while also helping to reduce energy use. Built-in application macros in the drives help you easily set up and tailor the drives to meet the needs of your processes.

ABB drives for water and wastewater

Series ACQ810

- Built-in, customizable control software for water and wastewater processes
- Shares operating times between pumps
- Reduces stress on the pumping system



Designed for water and wastewater processes with built-in pumping functions

Series ACQ810

- Power range 1.1 to 500 kW (3-phase 380 to 400 V)
- Power range 0.37 to 22 kW (3-phase 200 to 240 V)
- Direct torque control
- Built-in EMC Category C3, C2 with optional filter
- Safe torque-off feature as standard
- Removable memory module
- Programmable using DriveSPC
- Control panel comes standard with the drive (except frame G)
- 2 analog inputs, 2 analog outputs
- 2 bidirectional digital I/Os
- 6 digital inputs, 2 relay outputs
- Built-in control functions
 - Soft pipe filling
 - Pump auto change
 - Redundancy
 - Pump protection
 - Flow calculation
 - Multi-pump control
 - Pump priority
 - Sleep and boost
 - Level control
 - Pump cleaning

For further information, see "ABB drives for water and wastewater, ACQ810, 0.37 to 500 kW", code: 3AUA0000055685 EN.

ABB drives for HVAC

Series ACS320

- Embedded BACnet MS/TP, N2, FLN and Modbus RTU
- Built-in HVAC application control
- Saves energy in HVAC systems



The compact drive for HVAC pump and fan applications up to 4 kW

Series ACH550

- With over 500,000 drives installed, the ACH550 has proven its reliability and flexibility across HVAC applications
- Embedded BACnet MS/TP, N2, FLN and Modbus RTU
- Built-in HVAC application control and built-in swinging choke for harmonics reduction
- Saves energy in HVAC systems



Proven reliability and flexibility across HVAC applications

Series ACS320

- Power range 0.37 to 4 kW (3-phase 380 to 480 V)
- Embedded BACnet MS/TP, N2, FLN and Modbus RTU
- Built-in HVAC application control
- Two PID controllers
- Timers with real-time clock
- Pump and fan controls
- Cooling fan control
- Pump cleaning
- Energy optimizer feature
- Sleep function

For further information, see flyer "ABB drives for HVAC, ACS320, 0.37 to 4 kW", code: 3AUA0000125438 EN.

Series ACH550

- Power range 0.75 to 355 kW (3-phase 380 to 480 V)
- Power range 0.75 to 75 kW (3-phase 208 to 240 V)
- Power range 1-phase 208 to 240 V (50% derating)
- Two built-in PID controllers
- Tailor made HVAC control panel, with 18 languages built-in
- Real-time clock and calendar
- Built-in timers
- Energy efficiency
- Optional flange mounting

For further information, see brochure "ABB drives for HVAC, ACH550, 0.75 to 355 kW", code: 3AFE68295378 EN.

ABB motion control drives provide capability without complexity

ABB motion control drives offer flexible technologies and high performance motor control to solve a wide variety of applications. The range includes powers from less than 1 kW to more than 100 kW. The drives enable operation with single and three-phase supplies for global markets, and have open communication options as well as real-time Ethernet technologies such as EtherCAT® and PowerLink.

Our intelligent motion drives include programming options for single and multi-axis control applications or can be combined with our multi-axis motion controllers and PLC products for system solutions.



Series MotiFlex e100

- Wide voltage range, DC bus capability and three-phase operation for a broad range of applications
- Ethernet PowerLink technology for real-time motion control
- Mint programming for multitasking control of communications, logic, motion and HMI interaction in a powerful yet simple programming language.



Versatile motion control drive for a wide range of applications

Series ACSM1

- Wide power range, different product variants and programming flexibility ensure an optimum solution for both single and multi-axis systems.
- Control of synchronous and asynchronous motors with direct torque control (DTC) in open or closed loop
- Regenerative supply for applications with high braking power duty cycles



The flexible workhorse for many high performance applications

Series MotiFlex e100

- Three-phase operation from 180 to 528 V AC
- 1.5 to 65 A rms in three frame sizes
- IP20 enclosure for cabinet installation (UL open)
- Real time Ethernet operation with PowerLink
- Suitable for single drive and multi-axis systems
- Controls rotary and linear AC servo motors
- Integrated DC bus for energy sharing capability
- Options
 - Plug-in motion controller for up to five axes
 - Fieldbus options
 - Plug-in IO options (digital or analog)
 - Secondary feedback options, resolver or encoder
 - Filters, brake resistors, chokes and DC bus bars

For further information, see flyer “ABB motion control products, MotiFlex e100 servo drives”, code: 3AUA0000116019 EN.

Series ACSM1

- Three-phase operation 230 to 500 V AC
- 3 to 635 A rms, power range 0.75 to 355 kW
- IP20 enclosure for cabinet installation (UL open)
- Suitable for single drive and multidrive configurations
- Speed, torque and motion control
- Controls synchronous and induction motors
- Integrated safe torque-off (STO) as standard
- Innovative memory unit for easy drive management
- Options
 - Various control options for encoder feedback and communication with master and I/O extension
 - Cooling variants: air, cold-plate, push-through
 - Winder control program
 - Regenerative supply
 - Drive variant for lift application

For further information, see catalog “ABB motion control drives, ACSM1”, code: 3AFE68675073 EN.

ABB motion control drives

Series MicroFlex Analog

- Compact motion control drive for single and three-phase operation
- +/- 10 V analog speed / torque demand or Pulse + Direction inputs
- Choice of resolver feedback or incremental encoder / SSI

Series MicroFlex e100

- Compact motion control drive for single and three-phase operation
- Ethernet PowerLink technology for real-time motion control
- Mint programming for multitasking control of communications, logic, motion and HMI interaction in a powerful yet simple programming language



Compact motion control drive for simple applications



Compact motion control drive with real time Ethernet technology

Series MicroFlex Analog

- 1 or 3-phase operation from 105 to 250 V AC
- 3, 6 and 9 A rms
- IP20 enclosure for cabinet installation (UL open)
- Auto-tuning and anti-resonance digital filters
- Suitable for single drive and multi-axis systems
- Controls rotary and linear AC servo motors
- Options
 - Space saving footprint EMC filter
 - Brake units

For further information, see flyer “ABB motion control drives, MicroFlex brushless AC servo drives”, code: 3AUA0000123110 EN.

Series MicroFlex e100

- 1 or 3-phase operation from 105 to 250 V AC
- 3, 6 and 9 A rms
- IP20 enclosure for cabinet installation (UL open)
- Real-time Ethernet operation with PowerLink
- Suitable for single drive and multi-axis systems
- Controls rotary and linear AC servo motors
- Options
 - Space saving footprint EMC filter
 - Brake units

For further information, see flyer “ABB motion control products, MicroFlex e100 servo drives”, code: 3AUA0000116018 EN.

Series MicroFlex e150

- Compact motion control drive with embedded safety for single and three-phase operation
- Ethernet technology including EtherCAT® for real-time motion control
- Advanced Mint programming for multitasking control of communications, logic, motion and HMI interaction in a powerful yet simple programming language



Compact motion control drive with embedded safety and EtherCAT® technology

Complete motion control solutions

The motion control drives are part of ABB's extensive range of motion control solutions. The solutions include human-machine interfaces (HMI), programmable logic controllers (PLC), functional safety technology, multi-axis motion controllers, rotary servo motors and linear motors. All of which seamlessly interface to provide a complete machine control solution.



Series MicroFlex e150

- 1 or 3-phase operation from 105 to 250 V AC
- 1, 3, 6 and 9 A rms
- IP20 enclosure for cabinet installation (UL open)
- Embedded real-time Ethernet including EtherCAT®, Modbus TCP and Ethernet/IP™
- Suitable for single drive and multi-axis systems
- Controls rotary and linear AC servo motors
- Safe torque-off feature as standard
- Options
 - Additional IO
 - Simulated encoder output
 - Space-saving footprint EMC filter
 - Brake units

For further information, see flyer "ABB motion control products, MicroFlex e150 servo drives", code: 3AUA0000097609 EN.

Complete motion control solutions

- CP600 HMI range offers 64k touchscreen displays from 4,3" to 15", portrait and landscape versions
- Safety technology with integrated drive features, safety PLC and safe I/O systems, as well as Jokab Safety sensors, actuators, safety relays, programmable safety controllers
- AC500 PLC offers comprehensive and scalable platform, which is powered by CoDeSys IEC61131-3 and PLCopen.
- NextMove motion controllers offer a choice of hardware platform and feature CANopen® expansion, on board I/O and powerful Mint motion control programming
- A wide range of rotary servo motors, gearheads and linear motors

For further information, see brochure "ABB motion control solutions", code: 3AUA0000068580 EN.





DC drives

ABB DC drives are available as regenerative or non-regenerative drives. ABB offers digital DC drives from machinery applications all the way up to complete drive solutions in cabinets. The drives can be also used in revamp or upgrade solutions. The power range is from 9 up to 18000 kW in 12-pulse systems.

ABB standard drives designed for machine manufacturers

Standard drives offer ideal DC drive solutions for machine manufacturers – both in new installations or as a replacement for older analog devices. Various interfaces and compact design provide machine manufacturers with maximum flexibility for machine integration.

DCS550-S modules

- Compact drive for machinery manufacturers
- Suited for new installation and retrofitting
- Integrated high performance three-phase field exciter up to 35 A
- Control panel and PC assistant provide ease-of-use



Ideal drive for machinery manufacturers with its compact dimensions and robust technology

ABB industrial drives offer flexibility for a broad range of applications

Industrial drives are designed for industrial applications and are available both as complete DC drives and as modules to meet the requirements of end users, machine builders and system integrators. These drives are highly flexible DC drives and can be configured to meet the precise needs of industrial applications.

DCS800-S modules

- High power density save space in existing installations
- User-friendly due to startup assistance, auto-tuning functions and a multilingual assistant control panel
- Flexible connectivity using a common PC tool Drive Window and remote monitoring
- Additional functions and features with IEC 61131 programming



Fits with all process applications, providing high flexibility and scalability up to 5200 A per single module

DCS550-S modules

- Power 9 kW up to 545 kW
- 230 to 525 V AC, three-phase
- 20 to 1000 A DC
- Integrated high performance three-phase field exciter maximum 35 A
- Adaptive programmable with Drives AP
- Integrated Winder
- Built-in options
 - I/O extensions modules
 - Fieldbus adapter modules

For further information, see catalog "ABB DC Drives, DCS550" code: 3ADW000378.

DCS800-S modules

- Power 10 kW up to 4160 kW
- 230 to 1000 V AC
- 20 to 5200 A DC
- 0 to 1160 V DC
- Compact design, highest power-to-size ratio in its class
- Integrated field exciter
- Numerous optional features to adapt the drive to various applications
- Freely programmable by means of an integrated IEC 61131-PLC
- 6- and 12-pulse configuration
- Drive-to-drive link for fast communication between drives including master follower configurations
- Common PC tool Drive Window for commissioning and maintenance
- IBA remote monitoring
- Built-in options
 - IO extensions modules
 - Fieldbus modules
 - Second encoder or resolver

For further information, see catalog "ABB DC Drives, DCS800" code: 3ADW000192.

DC800-A – complete drive solutions

- Wide range of power, max. 18 MW
- Proven type tested design
- Fully routine tested for short commissioning and downtime
- Approvals for different markets (eg. marine or US)

Complete delivery of a tested drive system in a compact enclosure



DCS800-A – complete drive solution

- Power 10 kW up to 18 MW
- 230 to 1200 V AC
- 20 to 20000 A DC
- 0 to 1500 V DC
- Individually adaptable to customer requirements
- High power solutions in 6- and 12-pulse up to 20000 A, 1500 V
- Individually factory load tested
- Very flexible cable connections to bottom, top or rear
- Marine approvals DNV, ABS, RMT, etc.
- US market approval UL
- Degree of protection IP21, IP22, IP31, IP42, IP54R

For further information, see catalog DCS800-A Enclosed Converter, code: 3ADW000198.

DCS800-E, -R – modernization solutions

- Enhance productivity and quality
- State-of-the art communication via fieldbus
- Reuse proven long-life components (busbars, chokes, cables, etc.)
- Enhance connectivity and remote monitoring
- Solve spare part problem of by partial upgrade



Modernization solutions for improved production performance and reliability

DCS800-E, -R – modernization solution

- Upgrade of existing control electronics by reusing existing thyristors (DCS800-R)
- Fully mounted, cabled and tested panel solution for an existing cubicle, ready for insertion (DCS800-E)
- Prepared upgrade packages for classic and obsolete drives (eg. DCS500, TYRAK)

For further information, see catalog "DC Drives Modernization – Expansion – Modernization", code: 3ADW000007.





Medium voltage drives

ABB offers an extensive portfolio of variable speed drives and soft starters for medium voltage applications in the power range from 250 kW to more than 100 MW.

They are used in a wide range of applications in industries such pulp and paper, metals, marine, mining, cement, power, chemical, oil and gas and water and wastewater.

ABB general purpose drives offer ease-of-use with standard motors

General purpose drives are used to control standard motors. These motors are typically used to drive applications such as pumps, fans, compressors, mixers, mills and conveyors.

ACS 1000

- Retrofit-ready for existing motors
- Output sine filter for pure sinusoidal voltage and current output
- Integrated or separate input transformer for highest system design flexibility

ACS 2000

- Suitable for use with or without an input isolation transformer
- Available as low harmonic or regenerative drive
- Modular design for high reliability and low maintenance costs

Reliable power control for induction motors



Available for direct-to-line connection

ACS 1000

- Air-cooled power range 315 kW to 2 MW (2.3, 3.3, 4.0, 4.16 kV)
- Water-cooled power range 1.8 to 5 MW (3.3, 4.0, 4.16 kV)
- Available with an integrated input transformer or for connection to external input isolation transformer
- Output sine filter for pure sinusoidal voltage and current outputs
- For induction motors
- Marine certification available for ABS, CCS, DNV

For further information, see catalog "ACS 1000, ACS 1000i", code: 3BHT490400R0001.

ACS 2000

- Power range 250 to 2600 kW (4.0 to 6.9 kV)
- Air cooling
- Available for transformerless operation allowing a direct connection to the line supply (direct-to-line), for connection to an external input isolation transformer or with an integrated transformer
- Available as a low harmonic drive for optimal low harmonic performance or as a regenerative drive for enhanced active braking and power factor correction
- For induction motors

For further information, see catalog "ACS 2000", code: 3BHT490640R0001.

Improving energy efficiency is the fastest, the most sustainable and the cheapest way to reduce greenhouse gas emissions.

ACS 5000 air-cooled

- Low harmonic solution (36-pulse configuration)
- Available with an integrated transformer or for connection to an external input isolation transformer
- Available for induction, synchronous and permanent magnet motors

Powerful motor control of induction, synchronous or permanent magnet motors



ACS 5000 air-cooled

- Power range 2 to 7 MW (6.0 to 6.9 kV)
- Air cooling
- Low harmonic solution (36-pulse configuration)
- Available with an integrated transformer or for connection to an external input isolation transformer
- Redundant cooling available as an option
- Available for induction, synchronous and permanent magnet motors

For further information, see catalog "ACS 5000", code: 3BHT490501R0001.



Introduction

Low voltage drives

Motion control drives

DC drives

Medium voltage drives

PLCs

Connectivity and PC tools

Services

ABB special purpose drives for engineered solutions to specific needs

Special purpose drives are engineered drives, typically used for high power, high speed or special performance applications such as test stands, marine propulsion and thrusters, rolling mills, SAG and ball mills, large pumps, fans and compressors.

ACS 5000 water-cooled

- Superior arc protection for high level of personal safety and drive availability
- Low harmonic solution (36-pulse configuration)
- Available with an integrated transformer or for connection to an external input isolation transformer

ACS 6000

- Modular drive designed for the most demanding single or multi-motor applications
- Available as a regenerative drive for reduced harmonics, enhanced active braking and power factor correction

Superior arc protection for a high level of personal safety



Modular drive for demanding applications



ACS 5000 water-cooled

- Power range 5 to 32 MW (6.0 to 6.9 kV)
- Water cooling
- Superior arc protection function for very fast arc detection and elimination (IAC classified)
- Low harmonic solution (36-pulse configuration)
- Available with an integrated input transformer or for connection to an external input isolation transformer
- Available for induction, synchronous and permanent magnet motors

For further information, see catalog "ACS 5000", code: 3BHT490501R0001.

ACS 6000

- Power range 3 to 36 MW (3.0 to 3.3 kV; optional: 2.3 kV)
- Water cooling
- Modular design for optimum configurations
- Common DC bus enabling multi-motor operation and energy regeneration as option
- Line Supply Unit (LSU) for two-quadrant operation with a constant power factor of 0.96 over the whole speed range
- Active Rectifier Unit (ARU) for four-quadrant operation and reduced harmonics, adjustable power factor
- Available for induction, synchronous and permanent magnet motors
- Marine type approved design available as an option (eg. ABS, DNV, Lloyd's)

For further information, see catalog "ACS 6000", code: 3BHT490399R0001.

MEGADRIVE-LCI

- Suitable for high power and high voltage applications
- Available as variable speed drives and soft starters

Proven technology for high powers



MEGADRIVE-LCI

- Air-cooled power range 2 to 31 MW
- Water-cooled power range 7 to 72 MW and higher
- Available as variable speed drives and soft starters
- 6, 12 or 24-pulse converters to minimize the harmonic influence on the supply system and on the motor
- Series connection of thyristors for the scalability of voltage and power as well as for the implementation of n+1 thyristor redundancy
- User-friendly control terminal
- For synchronous motors

For further information, see catalog "MEGADRIVE-LCI", code: 3BHT490112R0001.







Programmable logic controllers

ABB offers a comprehensive range of scalable, powerful PLCs and robust HMI control panels. The PLC range starts with the affordable AC500-eCo. AC500 is the powerful flagship PLC, offering a wide range of performance levels. High availability configurations are easily to implement. For eXtreme Conditions like in marine, wind, solar, vibrating machines and wastewater treatment, the AC500-XC series is first choice. PS501 Control Builder Plus is the effortless, straightforward engineering tool for PLC, drives, HMI and internet services.

ABB's programmable logic controllers with highly advanced CPU functionality and industry-leading performance

AC500 PLC

- ABB's powerful flagship PLC offering a wide range of performance levels
- Machinery: most applications including robotics, press automation, transfer systems, assembly quality control, tracking, high performance, Motion Control, web server, remote access, communication capabilities, scalability

AC500-eCo PLC

- Meets the cost-effective demands of the small PLC market whilst offering total inter-operability with the core AC500 range
- Up to 10 I/O modules connected to the CPU, fast counter onboard CPU up to 50 kHz
- Web server, FTP server and Modbus TCP for all Ethernet versions

Powerful PLC offering with a wide range of performance levels



Cost-effective and compact PLC



AC500 CPUs

- CPU is available in a number of high performance and large memory configurations including up to 4 GB of internal data storage
- Up to 4 communication couplers in any configuration which can communicate with most fieldbus devices
- Slaves for PROFIBUS DP, CANopen®, EtherCAT® and PROFINET
- Ethernet (optional), programming via PC, internet protocols (web server, FTP, e-mail, time sync and more), IEC 60870-5-104
- COM2 (Sub-D9, RS232/RS485), programming via PC, ASCII protocol, Modbus RTU (master or slave)
- COM1 (spring terminal, RS232/RS485), programming via PC, CS31 bus (master), ASCII protocol, Modbus RTU (master or slave)

AC500-eCo CPUs

- 128 kB program memory
- Program processing time 0.08 μ s per instruction
- One onboard RS485 serial interface (2nd is optional)
- Optional SD card adapter for data storage and programming backup
- Web server for Ethernet CPUs, suitable for your demands, the visualization can be programmed within CoDeSys (Web Visualization). 512 kbit of memory is available in the CPU for storage of the web pages

Scalable and modular system

S500 I/O modules

- Communication-friendly, uniquely flexible
- Digital and analog modules can be configured to best meet customer requirements as well as offering local and/or remote expansion options using most industry standard communication protocols
- “eXtreme Conditions” modules and an assortment of PROFINET interface modules



Flexible I/O modules for the powerful AC500 PLC

S500-eCo I/O modules

- The AC500-eCo integrates perfectly into the AC500 family – this provides you with the option to build customized solutions based on the standard S500 and S500-eCo I/O range
- The AC500-eCo CPUs are centrally expandable with up to 10 I/O modules – the standard S500 and/or S500-eCo modules can be mixed



Flexible I/O modules for the cost-efficient AC500-eCo PLC

S500 I/O Modules

- The Bus Module possesses 16-I/Os in a width of only 67.5 mm
- Versatile flexibility, cost-efficient configuration
- New: “eXtreme Conditions” modules and an assortment of PROFINET and CANopen® interface modules
- Digital and analog modules can be configured to best meet customer requirements and to offer local and/or remote expansion options using most industry standard communications protocols

S500-eCo I/O Modules

- Wide range of analog and digital S500-eCo I/O modules available
- Prewiring is possible via the use of deductible terminals
- The modules can be fitted to the DIN rail with easy-to-use snap-on mechanism

Comprehensive range of scalable PLCs and robust HMI control panels

eXtreme Condition XC PLC

- “eXtreme Conditions” PLC with extended operating temperature, immunity to vibration and hazardous gases, use at high altitudes or rainy conditions, etc.
- Application possibilities include wind turbines, solar trackers, water treatment, sewage, and construction equipment

CP600 control panels

- The new HMI range is fully compatible with AC500 PLC reducing your implementation cost
- Importing the PS501 tags from AC500 programs into Panel Builder 600 to build a standardized system is made simple



PLC module for even the most demanding of conditions



Human-machine interface for efficient process control and monitoring

eXtreme Condition XC PLC

- Operating temperature from -30 °C up to +70 °C (two couplers, regular mounting, and display readable above 0 °C), reliable system start at -40 °C
- 4 g root mean square random vibration up to 500 Hz. 2 g sinusoidal vibrations up to 500 Hz including SD-card.
- Extended immunity to hazardous gases and salt mist
 - G3, 3C2 immunity
 - Salt mist EN 60068-2-52 / EN 60068-2-11
 - Hazardous gases from the standard IEC60721-3.3 3C2 mean: H₂S, SO₂/SO₃, CL₂, NO_X
- Operating altitude up to 4,000 m above sea level
- Extended EMC requirements
 - EN 61000-4-5 surge immunity test
 - EN 61000-4-4 transient / burst immunity test

CP600 Control Panels

- Panels can be installed upright
- USB interface located on one side for projects' download without connecting to a computer
- Easy commissioning: all panel Ethernet settings are made while configuring; simply insert the system card into another device to transfer data from one device to another
- User memory RAM 128 MB Flash Disk & 256 MB DDR
- Multilanguage applications
- Powerful macro editor using Java script based on standard ECMA-262 executes widgets and page events for increased performance

Powerful programming and supervision software

Control Builder Plus software

- For PLC, drives and control panels, there is now one single smart engineering tool: PS501 Control Builder Plus!
- Powerful programming functionality
- Advanced visualization capabilities
- Convenient diagnostics and debugging



One tool for all programming and configuration

DigiVis 500

- DigiVis 500 software is a simple and easily accessible solution for supervision applications
- Whether you are an OEM, a machine manufacturer or an integrator, the DigiVis 500 will adapt to any application in a machine or in the control room
- Functional reliability and dual-display mode will make all your supervision operations simple and easy



A simple and highly adaptable supervision solution

PS501 Control Builder Plus

- One tool for programming and configuration of PLCs AC500, AC500-eCo and specific LV drives offered by ABB
- Simple configuration of Fieldbuses and serial connections: PROFIBUS DP, CAN, CANopen®, Modbus, serial and ABB IO-bus CS31
- Easy configuration of real-time Ethernet networks: PROFINET, EtherCAT®
- Internet protocol suite includes: HTTP (web server in CPU), SNTP (time synchronization of CPUs), SMTP (email messages and attachments), FTP (file transfers), DHCP (automatic network IP configuration), TCP/IP (standard transmission control and internet protocol), UDP/IP (fast network communication), and IEC60870-5-104 (substation automation protocol)
- Remote firmware updates reduce travel cost and time

DigiVis 500 SCADA

- Whatever the size of your system, DigiVis 500 will fit your needs. It also allows you to manage high availability systems effortlessly.
- The built-in alarm system enables you to ensure the integrity of your installations by an advanced customization of your configuration
- Optimized data processing from archiving and safe guarding to exporting and practical use of the data
- DigiVis 500 software runs on any Windows PC platform up to Windows 7



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.

Connectivity and PC tools

ABB drives are connected to automation systems using embedded protocols and fieldbus adapters. All major fieldbus protocols are supported allowing flexibility and compatibility with the automation system. Different PC tools and remote monitoring solutions offer support throughout the drive's life cycle.

Fieldbuses

- BACnet MS/TP and IP
- CANopen®
- ControlNet
- DeviceNet™
- EtherCAT®
- EtherNet/IP™
- Ethernet PowerLink
- FLN
- InterBus-S
- LonWorks®
- Modbus RTU
- Modbus TCP
- N2
- PROFIBUS DP
- PROFINET IO
- SERCOS II
- IBA

Remote monitoring

Remote monitoring allows access to a drive via a local internet connection and a standard web browser. This enables easy application and drive diagnostics, monitoring, configuration and even drive control when needed. Remote monitoring tools can be configured to automatically send alarm notifications via SMS messages or email. This capability is very useful when drives are installed in remote or difficult to access locations.

PC tools

ABB drives are supported by a selection of PC tools used for drive selection, commissioning, programming, daily operation and maintenance, monitoring, and process tuning.

Engineering and sales tools

- DriveSize
- PumpSave
- FanSave

Startup and maintenance tools

- DriveWindow
- Drive composer pro\entry
- DriveStudio
- DriveWindowLight

Programming tools

- DriveSPC
- DriveAP
- DriveCam
- PLC and drive engineering tool PS501 Control Builder Plus

Operation tools

- DriveBrowser
- DriveAnalyzer
- DriveOPC



Complete life cycle services

Whether a drive is a part of the product you sell or component in your production process, reliable and efficient drive operation throughout the whole lifetime is the key. Our global life cycle services are designed to ensure that the drives keep running exactly as you expect, wherever they are.

With offices in over 90 countries, we are well placed to offer you technical advice and local support around the clock. Our service organization is staffed with drive experts who, together, have worked in thousands of industrial applications and processes. Their expertise is at your service and can help you determine the level of services that you need, from simple technical advice to a complete service contract.

Full support throughout the drive's life cycle

Our life cycle services are designed to support you from your first meeting with ABB to the drive installation, commissioning and maintenance, all the way up to the eventual drive replacement and recycling.

Examples of our life cycle services:

- Pre-purchase – we can help you select the most efficient drive for your process.
- Order and delivery – we simplify the ordering process and ensure timely deliveries from ABB or through our third party channel companies.
- Installation and commissioning – we can advise you how to install or commission a drive, or offer the complete service to you.

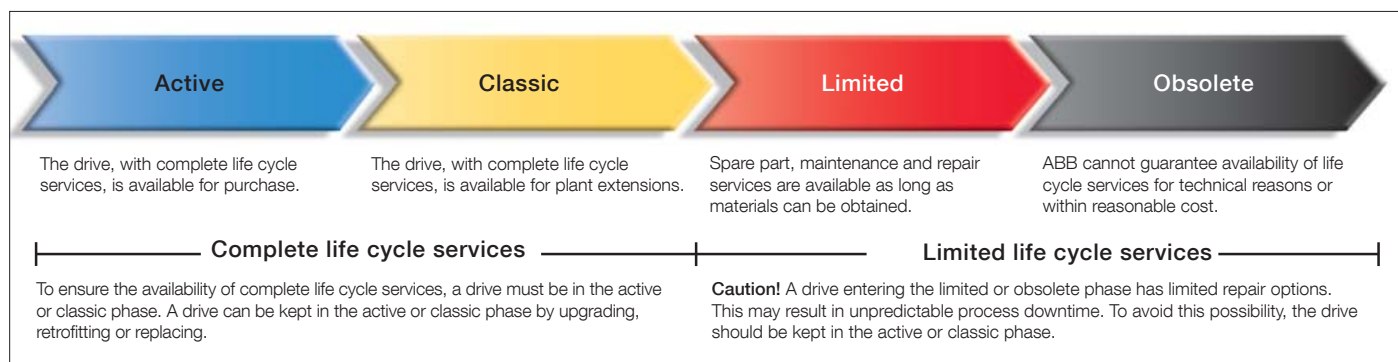
- Maintenance – we can help you maximize process performance and dependability with preventive maintenance on-site and reconditioning in ABB authorized drive service workshop.
- Repair – we offer extensive drive repair capabilities including emergency repair service and technical support via telephone and e-mail.
- Upgrade and retrofit – flexible and sustainable way to bring the latest technology into existing drives.
- Spare parts – spare parts, preventive maintenance kits as well as drive exchange units are available from ABB or third party channel companies.
- Replacement and recycling – we can recommend the best replacement drive and dispose of the old one.
- Training – from classroom training at ABB, training at your site or even online, our courses prepare your staff to operate, tune and maintain ABB drives.

Service contracts providing peace of mind

ABB service contracts are tailored to fit your needs, from individual services to drive care contracts. Contracts can include any of the services we offer, such as preventive maintenance, repairs, replacements or spare parts, and technical support. Service contracts provide you with the peace of mind that the drive is serviced and support is easily and quickly available, letting you focus on your core business.

Maximizing return on investment

At the heart of ABB's services is a four-phase drive life cycle management model. The life cycle phases are active, classic, limited and obsolete. In each phase, customers clearly see what life cycle services are available. This allows transparent management of investments in drives maintenance.





Contact us

www.abb.com/drives
www.abb.com/drivespartners

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