LOW VOLTAGE AC DRIVES

ABB industrial drives

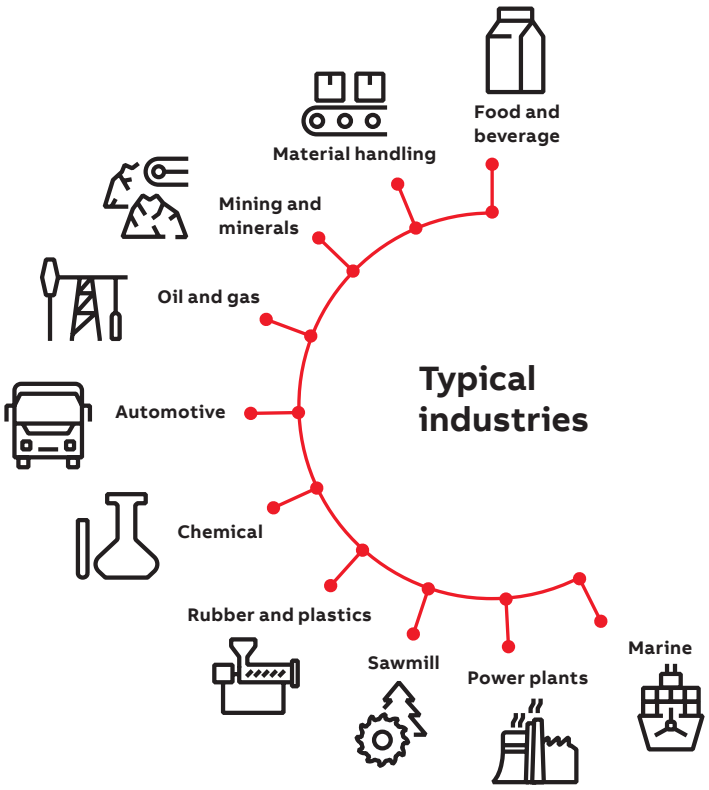
ACS880, single drives
0.75 to 8050 hp

Uncompromised productivity.
ACS880 series.

ABB industrial drives
ACS880 single drives

The all-compatible ACS880 series
Compromised productivity

The AC880 is an all-compatible ABB industrial drive, offered in a range of wall-mounted drives, drive modules, and cabinet-built drives.



ABB's all-compatible drives are designed to provide customers across industries and applications with unprecedented levels of compatibility and flexibility. Our ACS880 single drives are standalone. They are customized to meet the particular needs of specific industries including oil and gas, mining, metals, chemicals, cement, power plants, material handling, pulp and paper, sawmills, marine, water and wastewater, food and beverage, and automotive. They can control a wide range of applications, including cranes, extruders, winches, winders, conveyors, mixers, compressors, centrifuges, test benches, elevators, extruders, pumps, and fans.

High quality

Reliability and consistent high quality
ACS880 drives are designed for customers who value high quality and robustness in their applications. They have features such as coated boards and high enclosure classes, making the ACS880 suitable for harsh conditions. Additionally, every ACS880 drive is factory-tested at full load to ensure maximum reliability.
The tests include performance and all protective functions.

High performance, safety, and configurability
The ACS880 offers the highest level of performance. The drives are equipped with ABB's signature direct torque control (DTC), provides precise speed and torque control for all applications and supports virtually any type of motor.

The extensive ACS880 offering includes wall-mounted drives, drive modules, and cabinet-built drives, as well as low harmonic and regenerative variants.

The ACS880 has all the essential features built-in reducing the time required for engineering, installation, and commissioning. A wide range of options are also available to optimize the drive for different requirements, including certified, integrated safety features.


Bluetooth
Local
ACS880
1400.0 Rpm
Motor speed
Rpm
1400.0
Motor current
A
28.8
Flow rate
m³/s
10.9
Options
07:38
Menu
?
Stop
Loc/Rem
Start
ABB

Simplify your world without limiting your possibilities

The ACS880 industrial drive is equipped with built-in features that simplify ordering and delivery and reduce commissioning costs since everything is provided in a single, compact, and ready-to-use package.

Easy to use
- All-compatible ACS880 drives share the same easy-to-use user interface.
- Multilingual control panel display
- Graphical PC tools for engineering, commissioning, and maintenance

See page 10

Simple to select and install
- All the essential features built-in for simple drive selection, installation, and use
- Flexible product configurations
- Enclosure classes for different environments, up to UL (NEMA) Type 12 / IP55
- Flange mounting options

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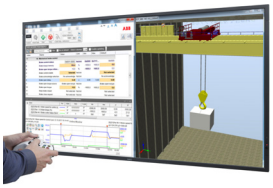

Virtual commissioning
- Virtual design and test environment for drive applications

See page 12

Smarter solutions with drive-based functional safety
- Safe torque off built-in as standard
- Optional safety modules for extended safety functions
- Encoderless safe speed detection
- Highest level of machinery safety, SIL 3 / PL e
- TÜV certified

See page 16

Comprehensive connectivity
- Communication with all major automation networks
- Remote monitoring
- Mobile connectivity

See page 14

Nine-year maintenance interval

Minimized downtime
- Robust, long lifetime design for maximum reliability
- Coated circuit boards for harsh conditions
- Removable memory unit for fast drive replacement
- Each drive factory-tested at full load
- Nine-year maintenance interval
- Worldwide service and support
- Advanced features for analyzing and resolving issues

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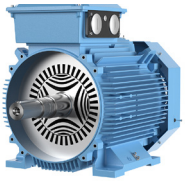

Global compatibility with various demands
- Global product approvals, e.g. CE, UL, cUL, CSA, marine certifications
- Support for most motor types
- Low harmonic drives
- Regenerative drives

See page 17

Premium control and programmability
- Direct torque control (DTC) for precise control
- Speed, torque and position control as well as synchronizing
- Adaptive programming as standard
- Drive-based PLC programmability (IEC 61131-3) for fully customized solutions

See page 18

Application- and industry-specific solutions
- Ready-made optimized solutions for various applications and industries

See page 20

Complete ACS880 single drives offering for a wide range of industrial applications

ACS880 drives are designed for customers who value high quality and robustness. They offer the highest level of performance for a wide range of industrial applications.

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01
Wall-mounted ACS880-01 UL (NEMA) Type 1 / IP21 drive
—
02
Wall-mounted ACS880-01 UL (NEMA) Type 12 / IP55 drive
—
03
Wall-mounted ACS880-11 UL (NEMA) Type 1 / IP21 regenerative drive
—
04
Wall-mounted ACS880-31 UL (NEMA) Type 1 / IP21 ultra-low harmonic drive
—
05
Cabinet-built ACS880-07 drive
—
06
Liquid-cooled ACS880-07LC drive

Wall-mounted ACS880-01 UL (NEMA) Type 1 / IP21 drives
These wall-mounted drives are available in a power and voltage range from 0.75 to 350 Hp and from 230 to 690 V. The ACS880-01 has all the necessary parts including an EMC filter, a reactor for harmonic mitigation, and even a braking chopper * built into the drive, and offering a compact and cost-efficient solution for cabinet-free installation.
* Standard in frames R1-R4

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01

Wall-mounted ACS880-01 UL (NEMA) Type 12 / IP55 drives, +B056
This drive is designed for applications with exposure to dust, moisture, and other harsh environments. The Type 12 drives can usually be installed next to the motor instead of installed in an electrical room. They have almost the same dimensions as the Type 1 drives, resulting in a very compact, cost-efficient, and robust package. The power and voltage ranges of the Type 1 & 12 drives are identical.

—
02

Wall-mounted ACS880-11 and cabinet-built ACS880-17 regenerative drives
The ACS880-11/17 is a compact and complete regenerative drive solution with everything you need for regenerative operation in cyclic or continuous braking applications. With regenerative functionality, the braking energy of the motor is returned to the drive and distributed to the supply network so that it can be utilized by other equipment.

ACS880 regenerative drives are also ultra-low harmonic drives and include all the benefits of ABB ULH drives. The ACS880 regenerative single drives are available in a power and voltage range from 5 to 3300 Hp and from 400 to 690 V.

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03

Wall-mounted ACS880-31 and cabinet-built ACS880-37 ultra-low harmonic drives
The ACS880-11/17 ultra-low harmonic drives are completely integrated, almost harmonics-free drives that are easy to install and use. No additional filters or special transformers are needed. This compact, cost-effective solution meets the strictest harmonic recommendations.

The ACS880 ultra-low harmonic single drives are available in a power and voltage range from 5 to 1193 Hp and from 400 to 690 V.

— 04

— 05

ACS880-07 cabinet-built drives, IP22, IP42 (+B054) and IP54 (+B055)
Cabinet-built drives are available with IP22 protection class as standard and IP42 and IP54 as options. The drives have a unique cooling arrangement even for harsh environments and a global cabinet design with a high-quality standard. The power range is from 74 to 3755 Hp, and the voltage range is 400-690 V.

ACS880-07LC, -07CLC, -17LC and -37LC liquid cooled drives, IP42 and IP54 (+B055)
The compact and robust liquid-cooled cabinet drives are the ultimate solution for various applications where space savings, silent operation, or durability in harsh environments is a must.

The Single drives with diode supply units consist of extremely compact diode supply and inverter units with parallel connected modules. The small footprint enables significant space and weight reduction.

ACS880-07CLC has an extremely compact design focused on marine use. It is available in 6-, 12- or 24-pulse diode solutions.

— 06

Easy to use

All-compatible user interface saves commissioning and learning time
The ACS880 is part of ABB's all-compatible drives portfolio. Other drives in this portfolio are the ACS380 and ACS580.

These drives share the same easy-to-use PC tools and multilingual control panels. They also have the same parameter structure saving time in learning a new drive and commissioning it.

The drives also share the same communication, I/O, and feedback options, simplifying the use of drives and spare parts handling.

Simplicity at your fingertips as standard
The control panel's assistants help you to set up the drive quickly and effectively. The intuitive, high-contrast, high-resolution display offers easy navigation in multiple languages. If you have questions at any step, simply press the ? key to find answers.

The PC tool (Drive Composer) for commissioning and configuration provides extensive drive monitoring capabilities and quick access to drive settings, as well as features like a graphical interface for configuring safety functions, visual control diagrams, and direct links to user manuals.

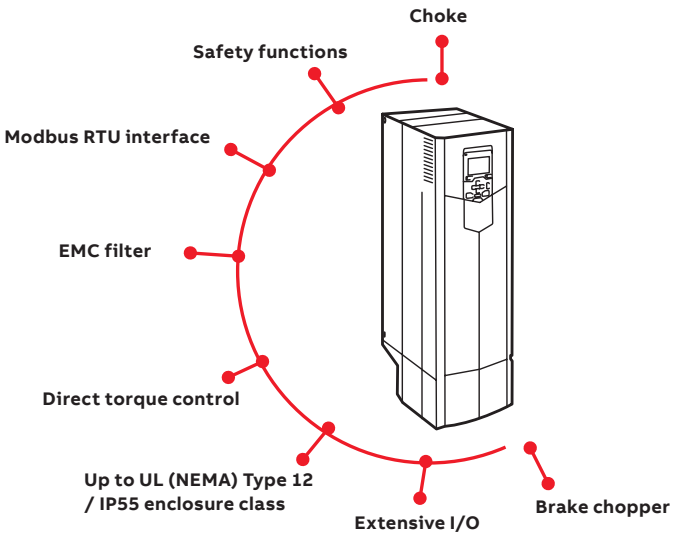
The ACS880, part of the all-compatible drives portfolio

Simple to select and install

Built-in features simplify ordering and installation
All ACS880 drives have a choke for harmonic filtering, a Modbus RTU fieldbus interface, and Safe Torque Off functionality as standard.
Other built-in features, standard or optional, include EMC filters, brake choppers, low harmonic or regenerative functionality and various I/O extensions, communication protocol adapters, and functional safety modules.

All essential features are built-in

The built-in features make drive configuration simple – the number of external components is minimized and there is no need for extra enclosures. This cuts engineering time and reduces commissioning costs and the risk of errors. Built-in features simplify ordering and make installation fast and easy. As a result, the whole drive system is more compact.



Different installation solutions
ACS880 offering has optimized variants for cabinet-building, wall-mounting, and modules for cabinet assembly.

ACS880 offering also includes complete and compact solutions for dusty and wet environments with up to UL (NEMA) Type 12 / IP55 enclosure class.

Engineering support
ABB provides an extensive selection of support materials and tools to help in engineering, such as:
- Sizing tools, e.g. DriveSize
- E-learnings
- Safety circuit design tools
- EPLAN P8 macros
- Dimensional and electrical drawings
- Application guides
- Drive installation and configuration videos

These tools and support from our experts ensure that the drive system can be set up easily and reliably.

DriveSize sizing tool for selecting the optimal drive
DriveSize is designed to help select the optimal drive, motor, and transformer for the application. Based on data supplied by the user, the tool calculates and suggests which drive and motors to use.

DriveSize is free software and can be used either online or downloaded for PC from *https://new.abb.com/drives/software-tools/drivesize.*

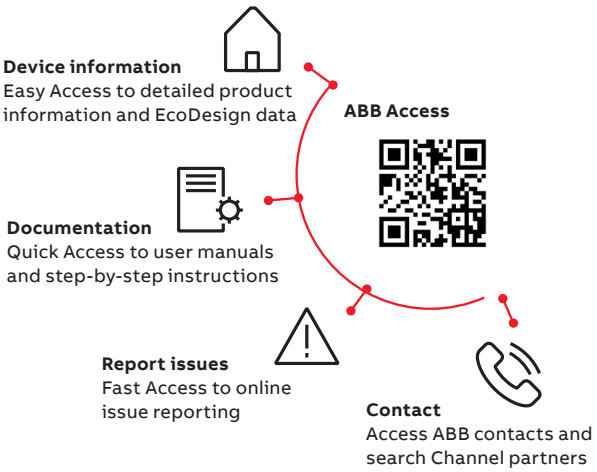
ABB Access

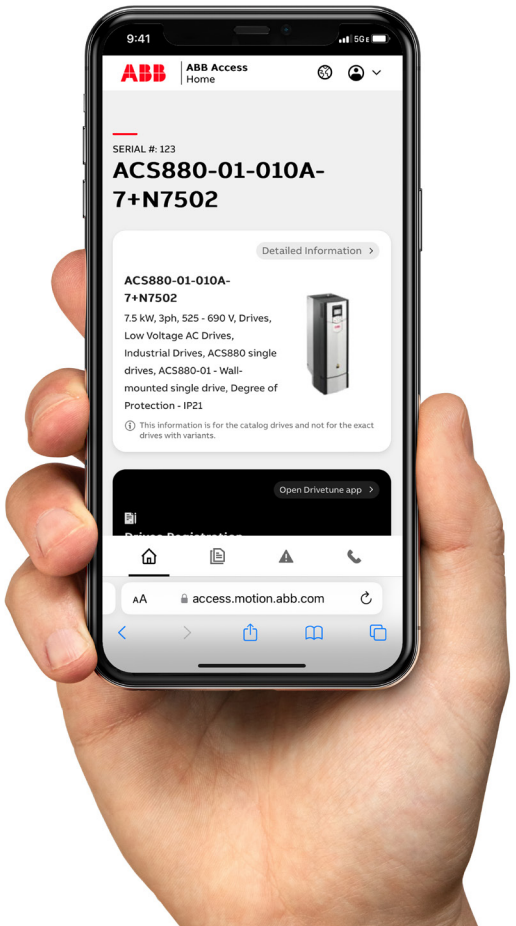
Scan the QR code to access 24/7 self-services for ABB drives, motors and PLCs

With ABB Access, you can unlock all aspects of your drives, motors, or PLCs, from one central location: the palm of your hand.

Simply scan the QR code on the ABB product to get started

ABB Access helps you easily find up-to-date product documentation and manuals online. If you happen to experience issues with your ABB product, ABB Access can quickly and easily help you report issues online and reach expert support from ABB.





Comprehensive connectivity

Communication with all major automation networks
ACS880 drives come with Modbus RTU fieldbus interface and drive-to-drive communication link as standard.

Plug-in connectivity adapters enable communication with all major industrial automation networks.

The drives support advanced communication features:
- Redundant communication
- PROFIsafe
- Functional safety over fieldbus
- Support for multiple protocols simultaneously
- Shared Ethernet connection for automation communication and Drive Composer pro PC tool – all communication via the same cable

To minimize connectivity-related risks, cybersecurity is a built-in, integral part of the ACS880.

To simplify ACS880's connectivity to automation systems, ABB offers support tools for seamless integration with PLCs from ABB and several other manufacturers.

Remote monitoring
With a built-in web server and standalone data logger, the NETA-21 remote monitoring tool enables secure worldwide access to your drives.

Drive data can also be collected via a 3G mobile connection with the RMDE reliability monitoring device.

Better connectivity and user experience

Mobile connectivity
The drive has a Bluetooth panel enabling easy connection to mobile devices.

ABB offers Drivetune and Drivebase applications to ease and enhance the use of ABB drives. These tools provide a user-friendly and easy-to-use approach for commissioning, servicing, and using ABB drives.

Drive mobile apps
- Full access to parameters
- Backup and restore functionality
- Access to drive data and service history
- Share configuration files via e-mail or Bluetooth
- Easy support package creation for faster remote support

Minimized downtime

Robust, long-lifetime design
The ACS880 is designed to last for a long time, even in harsh conditions. Benefits include a nine-year maintenance interval and good tolerance for vibrations and contamination.

Several design features make the ACS880 a safe choice:
- Coated circuit boards
- Minimized airflow through the control board section
- High IP class variants
- Designed for ambient temperatures up to 55 °C
- Faster and more accurate IGBT protection using a thermal model

Each ACS880 drive unit is tested in the factory at full load to ensure maximum reliability. Continuous quality improvements are made based on the results of accelerated lifetime tests.

Removable memory unit
The memory unit stores the drive's software and settings, including motor data. This unit can be switched from one drive to another, allowing simple and rapid drive replacement without any special equipment, software loading, parameter settings, or other adjustments in the drive or automation system. It also eliminates the risk of software incompatibility. The new drive is ready to run as soon as the memory unit is plugged in.

Nine-year maintenance interval

Advanced features for analyzing and resolving issues
The ACS880 has timers and counters that can be configured to remind you when the drive or process equipment needs maintenance.

Accurate and reliable diagnostic information is available for warning and fault messages. Help texts give detailed information about the warning or fault. Data loggers store critical values before and during a fault. The real-time clock allows you to see the exact times of events.

For faster remote support, all relevant drive data and changed parameters can be saved in a single file package that you can easily create with the Drive Composer or by creating a QR code with the control panel.

Global support
For true global coverage, ABB offers worldwide support via its extensive pre- and after-sales network, structured to make sure that you have the experts you need close by, locally and globally.
See pages 96-97.

Smarter solutions with drive-based functional safety

Maximized safety and conformity
The Safe Torque Off (STO) safety function comes integrated into ACS880 drives. Optional safety function modules provide an easy way to extend safety functions. These plug-in modules are installed and cabled inside the drive, enabling safety functions and diagnostics in one compact and reliable module. The safety functions are certified by TÜV Nord and comply with the highest performance requirements in machinery safety – SIL 3 / PL e *.

Increased productivity by doing things smarter
Safety functions help to minimize unnecessary downtime by keeping the application in control at all times. Safely-limited speed (SLS), for example, keeps the process running at a safe speed instead of stopping it.

Flexibility and ease of use
The safety functionality can be scaled to your needs. From STO wired to an emergency stop push button, to a complete safety system with PROFIsafe and a safety PLC, e.g. the AC500-S.

Available safety functionality
The following safety functions are supported:
- Safe torque off (STO)
- Safe stop 1 (SS1-t and SS1-r)
- Safe stop emergency (SSE)
- Safe brake control (SBC)
- Safely-limited speed (SLS)
- Safe maximum speed (SMS)
- Prevention of unexpected startup (POUS)
- Safe direction (SDI)
- Safe speed monitor (SSM)
- Safe motor temperature (SMT)

Integrated safety simplifies configuration

TÜV-certified safety design tool
The FSDT-01 functional safety design tool can be used to design complete safety circuits.
With this tool, it is possible to define the required safety integrity (SIL) / performance level (PL) for safety functions, verify the achieved safety level and generate design reports.

* SIL 2 / PL c for SMT (Safe motor temperature)

Global compatibility with various demands

Global product approvals
The ACS880 is a global product and has all the major global approvals including CE, UL, cUL, EAC, RCM, and TÜV. Marine approval and SEMI F47 are available either as standard or as an option.

Support for different motor types
The ACS880 provides reliable control for squirrel cage, high-torque or servo-type permanent magnet, synchronous reluctance (SynRM), submersible and high-speed motors. Practically any encoder type is supported.

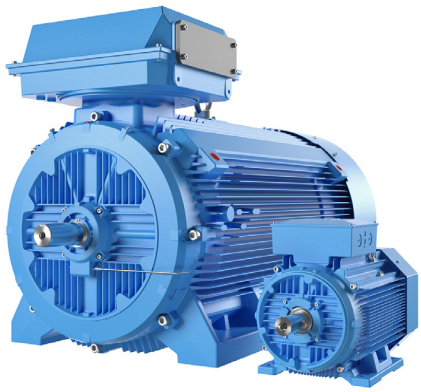
Regardless of the motor type, drive commissioning is easy with Drivetune.

Low harmonic content
All ACS880 drives have a choke for harmonic reduction. If lower harmonic content is needed, an ultra-low harmonic variant is available that produces exceptionally low harmonic content and meets IEEE519, IEC61000-3-12, and G5/4 harmonic requirements.

Regeneration of energy
The ACS880 offers several solutions for applications where electrical braking is needed. As standard, ACS880 drives have a flux braking feature that provides greater deceleration by increasing the motor flux. If this is not sufficient, the internal brake chopper can be used together with a brake resistor.

The most advanced solution is the ACS880 regenerative drive variant, which provides, continuous braking and potentially remarkable energy savings.

ACS880 also supports common DC bus configurations, where the braking energy from one load can be utilized by other loads.



Premium control and programmability

Direct torque control (DTC)
ABB's state-of-the-art motor control technology provides precise speed and torque control, with or without an encoder, even close to zero speed. DTC provides reliable starts and rapid reactions to load or network changes and ensures smooth and continuous operation. DTC provides optimal control, even with sine filters.

The energy optimizer feature maximizes motor efficiency by ensuring maximum torque per ampere, reducing the power drawn from the supply.

Position control and synchronizing
Allows position control without the need for an external position controller. The ready-made positioning functions can be easily configured by parameters. For an optimized solution for your application, the functions can be modified and extended by IEC 61131 programming using PLCopen motion blocks (future).

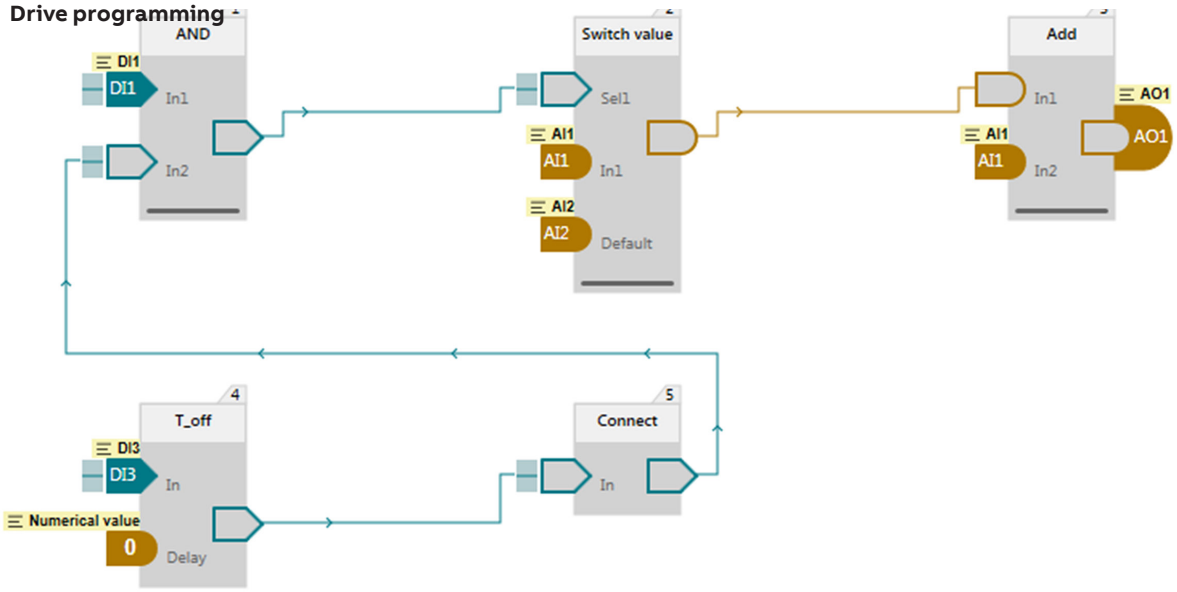
Additional features, such as the built-in synchronized drive-to-drive link and encoderless positioning, make ACS880 position control ideal for any axis.

To meet your specific application needs, you can customize your ACS880 with an extensive range of user-definable software settings (parameters) and adaptive programming.
This makes fine-tuning the ready-made application control program easy. For further customization, drive application programming based on IEC 61131 standard is available for full PLC programmability. IEC programming uses the same programming environment as ABB PLCs. It is easy to integrate the ACS880 with other PLCs and HMIs.

Adaptive programming
is easy-to-use dynamic programming which allows flexible adjustments to the ACS880 software.

IEC programming
based on IEC 61131 standard for full-scale PLC programmability is available as an option.

Drive programming



High speed compressors and blowers

Advanced turbo blowers, and cooling and refrigeration compressors can run at very high speeds and therefore require state-of-the-art compressor technology. This challenges the motor control and hardware requirements of variable speed drives. ABB has developed an application-specific options for high-speed applications (+N7500), delivering optimized performance in a compact frame size.

Aeration turbo compressors are becoming widely used in wastewater plants and is the most common high-power compressor application. A wastewater plant can see 45% energy savings by using high-speed turbo compressors when compared to traditional compressor technology. High-speed compression is also used in industrial-scale refrigeration compressors and industrial chillers, and are introducing remarkable energy savings in refrigeration applications.

High-speed motor technology isn't as standardized as traditional motors. The drive's motor control must be flexible enough to be able to control all kinds of high-speed motor types. The drive doesn't only need to match the requirements of various motor types, but also needs to have the capacity to push enough current for the motor.

Selecting an ACS880 drive gives you the following benefits in high-speed applications:

- Support for various high-speed motor types, with and without sine filters
- Wide power and voltage range, and a large number of product options help you find the right drive for your whole portfolio
- Compact drive size including a built-in input choke helps you reduce the cabinet size and makes machine design and component installation easier
- Pre-sales support with drive type and sine filter recommendations, as well as remote drive commissioning support, are available from ABB's worldwide OEM hubs
- Knowing that your high-speed compressor is designed for reliable 24/7 operation and the drive meets this challenge year after year even in harsh conditions gives you peace of mind
- Our high-speed module's lifecycle program guarantees spare parts and a long lifetime warranty if required

Application- and industry-specific solutions

Cranes (EOT cranes), +N5050
- Mechanical brake control
- Slow down and end limit logic
- Antisway
- Hoist speed optimization
- Shaft synchro

Tower cranes, +N5650
- Slew control
- Mechanical brake control
- Mobile access via Bluetooth

Winches, +N5100
- Mooring
- Anchor control
- Accurate open loop speed & torque control
- Winch interface for multiple control stands

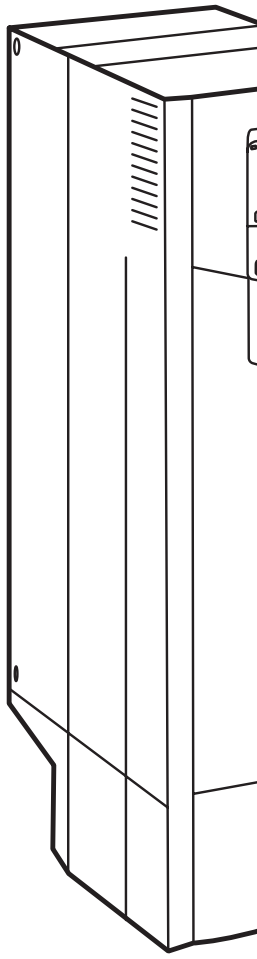
Winders, +N5000
- Roll diameter calculation
- Tension control
- Dancer and load cell control
- Inertia and friction compensation

Artificial oil lifting, ESP, +N5600
- Submersible motor control (induction and PM motors)
- Motor temperature minimization
- Backspin speed observer
- Rocking start
- Flow calculation

Artificial oil lifting, PCP +N5200
- Backspin control
- Automatic pump speed control
- Induction and PM motor control
- Protections for pump mechanics

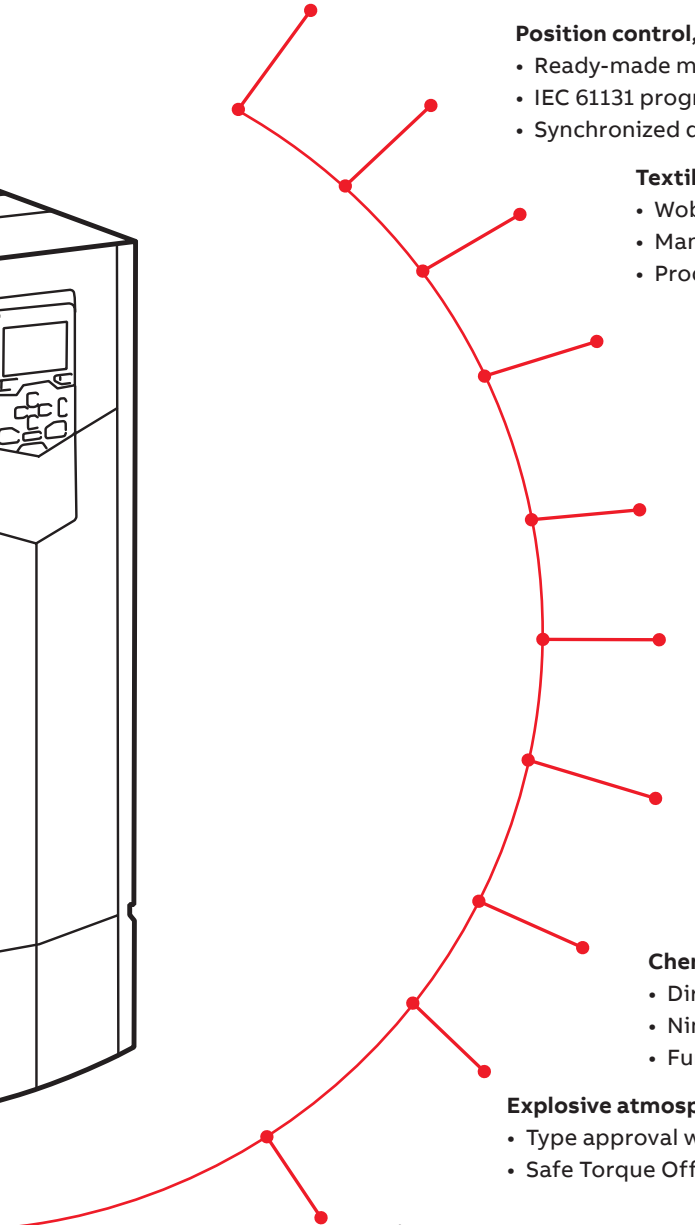
Artificial oil lifting, rod pump +N5250
- Optimization of the pump speed
- Protections for pump mechanics
- Pump and well identification run

Tunnel ventilation (override control), +N5450
- Override of protections in an emergency situation
- Built-in PID control
- Energy optimizer for maximum motor efficiency



By working closely with customers over many years, ABB has developed application control programs and specific software features for specific applications and industries. This results in programs and features that include lessons learned from many customers, and that are designed to give you the flexibility to adapt the programs to your specific needs.

Advantages:
- Enhanced application usability
- Lower energy consumption
- Increased safety
- Reduced need for PLCs
- Protected machinery
- Optimized application productivity
- Optimized time usage and lower operational costs



Anticavitation, +N5900
- Extend the pump lifetime and secure the process
- Detects cavitation and ensures optimal pump speed to remove it

Position control, +N5700
- Ready-made motion control functions
- IEC 61131 programming with PLCopen motion blocks (future)
- Synchronized drive to drive link

Textile (spinning), +N5500
- Wobble function
- Manual/auto off function
- Production history

Test bench, +N5300
- Fast communication
- High torque accuracy and linearity
- Acceleration damping
- Minimized motor noise

Centrifuge, decanter, +N5150
- Accurate speed and torque control, even without an encoder
- Speed difference control of scroll drives for decanters

Cooling tower, +N5350
- Support for slow, high-torque cooling tower motors
- Trickle current to keep the motor warm and dry, preventing condensation
- Anti-windmill function

High speed control firmware, +N7500
- Application specific option for high-speed applications
- Optimized performance in a compact frame size
- Pre-sales support with drive type and sine filter recommendations

Chemical industry
- Direct torque control with sine filters
- Nine-year maintenance interval
- Functionality that conforms with NAMUR requirements

Explosive atmospheres
- Type approval with ABB Ex motors
- Safe Torque Off, STO (+Q971) and thermistor protection module (+L537)

Marine
- Type approval from various key classification bodies (+C132)
- Product certification process
- 440 V variant

Higher enclosure class and flange-mounted drives for installations in harsh conditions

Don’t let dust, moisture, or dirt interrupt your processes and drag down productivity. ACS880 UL (NEMA) Type 12 / IP55 & IP54 units, flange-mounted drives, and Rittal VX25 cabinet accessories help keep your systems running even in tough conditions.

- Protection against dust and water
- Save space, increase safety and reduce overall costs
- Maintain productivity in harsh conditions
- Minimized downtime and flawless operation

Higher enclosure class for rough environments
The ACS880 UL (NEMA) Type 12 / IP55 & IP54 units are an ideal choice for harsh environments. Typical harsh environments include mining, cement, oil and gas, chemical, metal, and wood processing industries, and harsh outdoor conditions in the desert and tropics. Higher protection class ensures smooth processes by reducing downtime.

The ACS880-01 units can be installed directly on the wall closer to the motor, which provides flexibility and simplifies installation. The robust protective design ensures that no additional enclosures or components, including extra dust filters and fans, are needed.

ABB does not offer enclosures for potentially explosive atmospheres. ACS880LC liquid-cooled modules can be installed in 3rd party enclosures, as they are 100% liquid-cooled.

Ordering codes	Description
+B056	UL (NEMA) Type 12 / IP55 (ACS880-01, -11, -31)
+B055	UL (NEMA) Type 12 / IP54 unit (ACS880-07, -17, -37, -07CLC, -17/37LC)
+C131	Vibration dampers (ACS880-01, -11, -31)
+C135	Flange mounting (ACS880-01, -11, -31)

Please contact ABB for Rittal VX25 cabinet accessories

Be productive, save money, and keep it simple
If the environment around your processes includes impurities, drives with lesser enclosure ratings are more likely to fail because they are not designed for harsh environments.
A failure causes process interruption and instantly cuts down productivity and adds costs.
ABB's robust proven design includes coated control boards, plated busbars, and UL (NEMA) Type 12 / IP55 & IP54 enclosure class * or flange mounting * combined with proper cabinet design (* = option), and a fully gasketed control panel section that maintains the IP rating even if the control panel is removed, will help keep your processes up and running in tough environments.

Installing the drive closer to the motor allows shorter motor cables to be used. Shorter cables not only cost less and are easier to handle, but they make it easier to fulfill EMC requirements and reduce the need for additional filters.

Reduce the overall cost for the ABB ACS880-01 drive by eliminating the drive cabinet. The UL (NEMA) Type 12 / IP55 & IP54 enclosure provides protection from dust and jetting (IP55) or splashing (IP54) water from any direction. Speed-controlled main cooling fans maintain optimal drive operating temperatures without a need for external cooling. Keeping the drive at optimal temperature increases the lifetime of the drive.

In addition, the ACS880-01 UL (NEMA) Type 12 / IP55 units reduce maintenance costs compared to cabinet-mounted drives because of the elimination of air filters. The cabinet air filters need to be replaced regularly and if they're not cleaned or taken care of properly, the cabinet temperature may rise and cause issues with the process. In these situations, a maintenance engineer may need to open the cabinet door to identify the root cause.

Exploring the root cause is extra work and an open cabinet door instantly decreases safety, exposes all the components to impurities, and interrupts your processes. All these costs can be avoided with a cabinet-free installation.

ACS880 flange-mounted drives
Our flange-mounted industrial drives portfolio includes ACS880-01, -11, and -31 single drives, and -04F and -04FXT drive modules. Flange mounting is especially useful in outdoor cabinet installations and in harsh environment installations where dust and other impurities are present. These types of installations are typical, for example, in the mining, oil and gas, rubber, and textile industries.

With flange mounting (push-through), the drive is installed with a flange onto a cabinet wall so that the heatsink is outside the cabinet. This way, the airflow through the drive control section, and the heatsink is separated. With only the control section inside the cabinet, less heat is generated inside the cabinet. With the reduced need for cooling air, smaller fans or heat exchanger units can be used. Flange mounting helps you simplify cabinet design, reduce its size, and lower total costs.

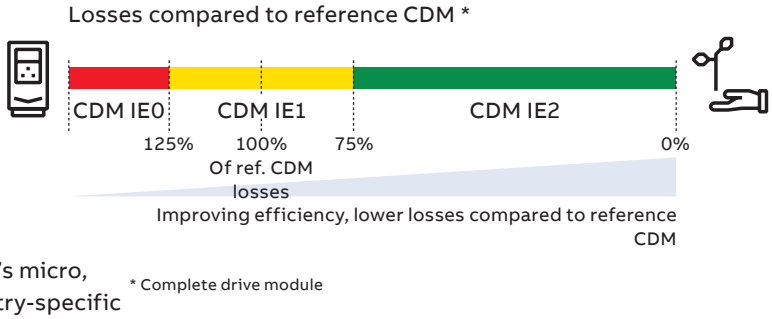
Ready-made accessories for simplified cabinet assembly
Installing ACS880 drive modules into Rittal VX25 cabinets is made easier with mechanical and electrical accessory kits. The ready-made accessories will save time in design and reduce the build time to enable faster cabinet delivery. This will enable machine builders, system integrators and panel builders to build drive packages using their cabinet design with ABB technology.

For more information and ordering details, please see manual supplement 3AXD50000523191.

EU Ecodesign Regulation

The EU has implemented new, more demanding regulation (EU) 2019/1781, replacing regulation 640/2009 and setting the minimum efficiency levels for direct-on-line rated low voltage induction motors and for variable speed drives up to 1000 V. The regulation is implemented in two steps July 1, 2021, and July 1, 2023.

Variable speed drives



* Complete drive module

Step 1: July 1, 2021

IE2 efficiency level mandatory for AC drives

- Power range from 0.12 to 1000 kW.
- 3-phase drives with diode rectifier including ABB's micro, machinery, general purpose, industrial and industry-specific drives.
- Drive manufacturers must declare power losses in percentage of the rated apparent output power at 8 different operating points as well as standby losses. The international IE level is given at the nominal point. Drives fulfilling the requirements will be CE-marked.
- All the covered ABB products fulfill the requirements.

Markings on the ABB AC drives

Unique identifier QR code to Ecodesign information

IE class and % loss of rated apparent power 50 Hz, 400 V — IE2 (90;100) 2,3 %

Unique QR codes are located on the rating plate and/or the front side of the drive.

Excluded from the regulation:

- All drives without CE marking
- Following low voltage, AC drives: regenerative drives, low-harmonic drives (THD < 10%), multiple AC-output drives and single-phase drives.
- Drive cabinets containing conformity-assessed modules
- Medium voltage drives, DC drives, and traction drives

Step 2: July 1, 2023

No changes for ABB drives from July 1, 2021.

For more information, see Ecodesign tool: https://ecodesign.drivesmotors.abb.com/

Technical data

Mains connection	
Voltage and power range	3-phase, UN2 208 to 240 V, +10%/-15% (-01) 3-phase, UN3 380 to 415 V, +10%/-15% (-01, -11, -31), ±10% (-07,-17-37) 3-phase, UN5 380 to 500 V, +10%/-15% (-01, -11, -31), ±10% (-07,-17-37) 3-phase, UN7 525 to 690 V, +10%/-15% (-01), ±10% (-07,-17,-37, -07CLC, -17/37LC) 0.75 to 350 Hp (-01) 5 to 150 Hp (-11, -31) 74 to 3755 Hp (-07) 74 to 1193 Hp (-17, -37) 476 to 8046 Hp (-07CLC, -17/37LC)
Frequency	50/60 Hz ±5%
Power factor ACS880-01, -07, -07CLC ACS880-11, -31, -17, -37, -17/37LC	 cosϕ = 0.98 (fundamental) cosϕ = 0.93 to 0.95 (total) cosϕ = 1 (fundamental)
Efficiency (at nominal power)	ACS880-01, -07, -07CLC, -17/37LC: 98% ACS880-11, -31, -17, -37: 97%
Motor connection	
Voltage	3-phase output voltage 0 to UN2 /UN3 /UN5 /UN7
Frequency	0 to ±598 Hz [1]
Motor control	Direct Torque Control (DTC)
Torque control Open loop Closed loop Open loop Closed loop	Torque step rise time: <5 ms with nominal torque <5 ms with nominal torque Non-linearity: ± 4% with nominal torque ± 3% with nominal torque
Speed control Open loop Closed loop Open loop Closed loop	Static accuracy: 10% of motor nominal slip 0.01% of nominal speed Dynamic accuracy: 0.3 to 0.4% seconds with 100% torque step 0.1 to 0.2% seconds with 100% torque step
Product compliance	
CE, UKCA Low Voltage Directive 2014/35/EU according to EN 61800-5-1:2007 Machinery Directive 2006/42/EC EMC Directive 2014/30/EU Quality assurance system ISO 9001 and Environmental system ISO 14001 Ecodesign Directive 2009/125/EC and its implementation regulation 2019/1781/EU RoHS 2011/65/EU and Delegated Directive (EU) 2015/836 RCM, EAC [3] TÜV Nord certification for functional safety [2] Marine type approvals for -01: ABS, Bureau veritas, CCS, DNV GL, KR, Lloyd's, NK, RINA, RMRS. For other drives, see https://new.abb.com/drives/segments/marine/marine-type-approvals UL, CSA: -01, -11, -31: cULus listed according to UL 61800-5-1 and CSA C22.2 No. 274, -07, -17, -37, -07LC, -17LC, -37LC: cULus listed according to UL 508A and CSA C22.2 No. 14, CSA certified according to CSA C22.2 No. 14 [6] -07CLC, -07LC, -17/37LC: cULus listed according to UL 508A and CSA C22.2 No. 14, CSA pending.	
EMC according to EN 61800-3: 2004 + A1: 2012. See page 73.	
Category C3 and C2 with internal option or as standard.	

Environmental limits	
Ambient temperature Transport Storage Operation area (air-cooled) (liquid-cooled)	 -40 to +70 °C -40 to +70 °C -15 to +40 °C as standard (-01, -11, -31) 0 to +40 °C as standard (-07, -17, -37) +40 to +55 °C with derating of 1%/1 °C (-01, -11, -31) +40 to +50 °C with derating of 1%/1 °C (-07,-17,-37) 0 to +45 °C as standard (-07CLC, -17/37LC) +45 to 55 °C with derating of 0.5%/1 °C (-07CLC, -17/37LC)
Cooling method Air-cooled Liquid-cooled -07CLC, -17/37LC Without liquid-cooling unit With liquid-cooling unit 	 Dry clean air Direct liquid-cooling, Antifrogen® L Incoming coolant temperature 0 to +40 °C as standard +40 to +45 °C with derating of 2%/1 °C +45 to +50 °C with derating of 2%/1 °C or 6%/1 °C 4) Incoming coolant temperature 0 to +36 °C as standard +36 to +46 °C with derating of 2%/1 °C
Altitude 0 to 1,000 m 1,000 to 4,000 m	 Without derating With derating of 1%/100 m 5)
Relative humidity	5 to 95%, no condensation allowed
Degree of protection UL Type Open / IP20 UL TYpe 1 / IP21 IP22 IP42 IP54 UL Type 12 / IP55	 Option (-01, -11, -31) Standard (-01, -11, -31) Standard (-07, -17, -37) Standard (-07CLC, -17/37LC). Option (-07, -17, -37) Option (-07, -17, -37, -07CLC, -17/37LC) Option (-01, -11, -31)
Paint color	RAL 9017/9002 (-01, -11, -31), RAL 9017/7035 (-07, -17, -37, -07CLC, -17/37LC)
Pollution degree	PD 2
Contamination levels	No conductive dust allowed
Storage	IEC 60721-3-1:1997, IEC 60721-3-1, Class 1C2 (chemical gases), Class 1S2 (solid particles) *
Operation	IEC 60721-3-3:2002, IEC 60721-3-3, Class 3C2 (chemical gases), Class 3S2 (solid particles) *
Transportation	IEC 60721-3-2:1997, IEC 60721-3-2, Class 2C2 (chemical gases), Class 2S2 (solid particles) *
Built-in functional safety. See pages 70-71.	
For safe torque off (STO) and safety functions modules Safety over fieldbus	EN/IEC 61800-5-2, IEC 61508: SIL 3, IEC 61511: SIL 3,EN/IEC 62061 EN ISO 13849-1: PL e - TÜV Nord certified PROFIsafe over PROFINET, certified

* C = Chemically active substances. S = Mechanically active substances.
1) Operation above 120 Hz might require type-specific derating. For higher output frequencies, please contact your local ABB office. Output filters may limit the output frequency. See product specific hardware manual for details.
2) For available certificates, see http://new.abb.com/drives/functional-safety
3) EAC directives: TR CU 020/2011 (EMC directive); TR CU 004/2011 (low voltage directive) EAC has replaced GOST R
4) See product specific hardware manual for detailed derating rules
5) Derating reduced by lower than 40 oC ambient temperature
6) In operation, UL/CSA panel shop standards that ACS880-x7 air & LC comply with, only allow ambient temperature of 0…40 °C

D

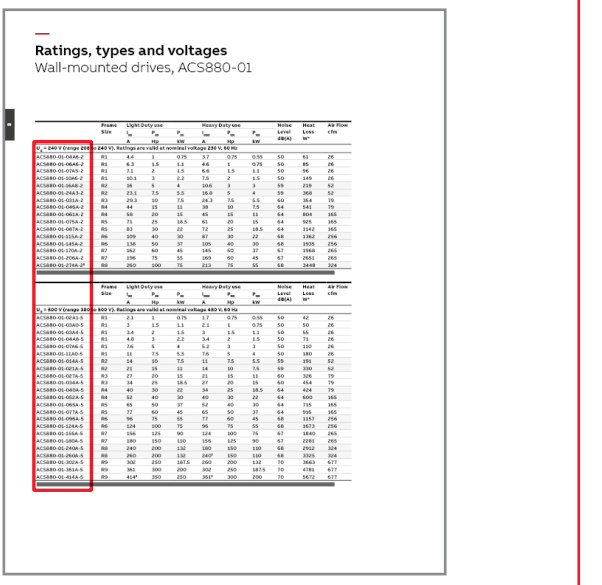
How to select a drive

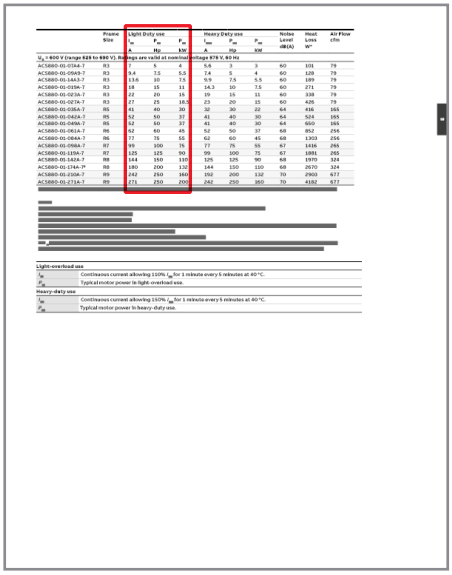
The right drive is extremely easy to select. The following instructions show you how to order the right drive for your application.

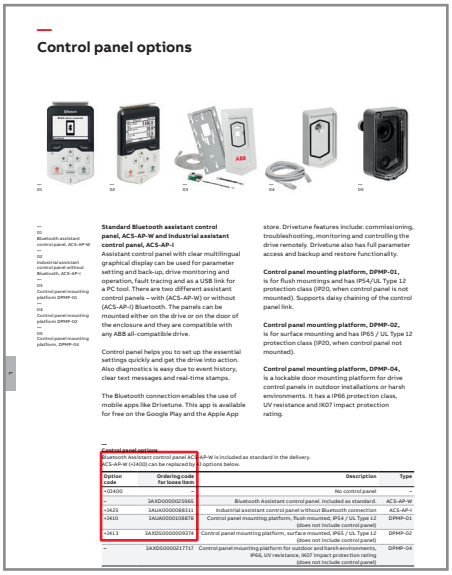
Start by identifying your supply voltage and select the related rating table. Or use ABB's DriveSize sizing tool.

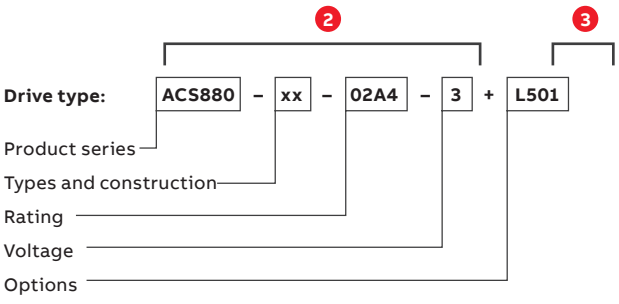
Select your drive's order code (drive type) from the rating table based on the load current, or, if it is unknown, select the drive based on your motor's power and current ratings.

Choose your options and add the option codes to the drive's order code. Remember to use a "+" mark before each option code.









Wall-mounted single drives
ACS880-01

—
01
ACS880-01 frame size R1, UL (NEMA) Type 1 / IP21
—
02
ACS880-01 frame size R5, UL (NEMA) Type 12 / IP55

—
01

—
02

Compact package for simple installation
The ACS880-01 comes in one compact package for easy installation and commissioning.
The drive supports wall mounting as standard and cabinet mounting as an option. The drive offering includes enclosure classes up to UL (NEMA) Type 12 / IP55, making it suitable for most environments and installations.

ACS880-01 drives have all the essential features built-in. These features include a choke for harmonic filtering as well as options including a brake chopper, EMC filter, and communication protocol adapter, functional safety, and I/O extension modules. The extensive range of options also includes external output filters and brake resistors.

The ACS880-01 is also available with marine approval from various key classification bodies.

Wall-mounted ACS880-01 drives
- Power ratings: 0.5 to 350 Hp
- Enclosure classes: UL (NEMA) Type Open / IP20 for cabinet mounting, UL (NEMA) Type 1 / IP21 (as standard) for wall-mounting, and UL (NEMA) Type 12 / IP55 for dusty and wet environments

Main options:
- C2 and C3 EMC filters, see page 73
- For brake chopper (as standard in frames R1 to R4) see page 82
- Brake resistor, see page 82
- Marine-type approval from various key classification bodies
- I/O extension modules, see page 63
- Communication protocol adapters, see page 63
- Speed feedback interfaces, see page 65
- Functional safety modules, see page 70
- Remote monitoring tool, see page 66
- Application specific software, see page 20
- Flange (push-through) mounting

The drives have an extensive selection of built-in features and options. See page 100.

Highlights
- Wide power range supporting wall mounting, 0.75 to 350 Hp
- Enclosure classes up to UL (NEMA) Type 12 / IP55
- Compact, single package with all the essential features built-in
- Easy installation for different environments
- Robust and reliable design
- Optional marine-type approved version
- Circuit Breaker branch circuit protection certified by UL (see hardware manual)

Ratings, types and voltages
Wall-mounted drives, ACS880-01

	Frame Size	Light Duty use			Heavy Duty use			Noise Level dB(A)	Heat Loss W*	Air Flow cfm
		I_{LD}	P_{LD}	P_{LD}	I_{2HD}	P_{HD}	P_{HD}			
		A	Hp	kW	A	Hp	kW			
U_N = 240 V (range 208 to 240 V). Ratings are valid at nominal voltage 230 V, 60 Hz										
ACS880-01-04A6-2	R1	4.4	1	0.75	3.7	0.75	0.55	50	61	26
ACS880-01-06A6-2	R1	6.3	1.5	1.1	4.6	1	0.75	50	85	26
ACS880-01-07A5-2	R1	7.1	2	1.5	6.6	1.5	1.1	50	96	26
ACS880-01-10A6-2	R1	10.1	3	2.2	7.5	2	1.5	50	149	26
ACS880-01-16A8-2	R2	16	5	4	10.6	3	3	59	219	52
ACS880-01-24A3-2	R2	23.1	7.5	5.5	16.8	5	4	59	368	52
ACS880-01-031A-2	R3	29.3	10	7.5	24.3	7.5	5.5	60	354	79
ACS880-01-046A-2	R4	44	15	11	38	10	7.5	64	541	79
ACS880-01-061A-2	R4	58	20	15	45	15	11	64	804	165
ACS880-01-075A-2	R5	71	25	18.5	61	20	15	64	925	165
ACS880-01-087A-2	R5	83	30	22	72	25	18.5	64	1142	165
ACS880-01-115A-2	R6	109	40	30	87	30	22	68	1362	256
ACS880-01-145A-2	R6	138	50	37	105	40	30	68	1935	256
ACS880-01-170A-2	R7	162	60	45	145	50	37	67	1968	265
ACS880-01-206A-2	R7	196	75	55	169	60	45	67	2651	265
ACS880-01-274A-2[3]	R8	260	100	75	213	75	55	68	3448	324

* Heat Loss value is a reference for cabinet thermal design. Value is calculated to Ecodesign regulations based on 90% speed and 100% current.

	Frame Size	Light Duty use			Heavy Duty use			Noise Level dB(A)	Heat Loss W*	Air Flow cfm
		I_{LD}	P_{LD}	P_{LD}	I_{2HD}	P_{HD}	P_{HD}			
		A	Hp	kW	A	Hp	kW			
U_N = 500 V (range 380 to 500 V). Ratings are valid at nominal voltage 480 V, 60 Hz										
ACS880-01-02A1-5	R1	2.1	1	0.75	1.7	0.75	0.55	50	42	26
ACS880-01-03A0-5	R1	3	1.5	1.1	2.1	1	0.75	50	50	26
ACS880-01-03A4-5	R1	3.4	2	1.5	3	1.5	1.1	50	55	26
ACS880-01-04A8-5	R1	4.8	3	2.2	3.4	2	1.5	50	71	26
ACS880-01-07A6-5	R1	7.6	5	4	5.2	3	3	50	110	26
ACS880-01-11A0-5	R1	11	7.5	5.5	7.6	5	4	50	180	26
ACS880-01-014A-5	R2	14	10	7.5	11	7.5	5.5	59	191	52
ACS880-01-021A-5	R2	21	15	11	14	10	7.5	59	330	52
ACS880-01-027A-5	R3	27	20	15	21	15	11	60	326	79
ACS880-01-034A-5	R3	34	25	18.5	27	20	15	60	454	79
ACS880-01-040A-5	R4	40	30	22	34	25	18.5	64	424	79
ACS880-01-052A-5	R4	52	40	30	40	30	22	64	600	165
ACS880-01-065A-5	R5	65	50	37	52	40	30	64	715	165
ACS880-01-077A-5	R5	77	60	45	65	50	37	64	916	165
ACS880-01-096A-5	R6	96	75	55	77	60	45	68	1157	256
ACS880-01-124A-5	R6	124	100	75	96	75	55	68	1673	256
ACS880-01-156A-5	R7	156	125	90	124	100	75	67	1840	265
ACS880-01-180A-5	R7	180	150	110	156	125	90	67	2281	265
ACS880-01-240A-5	R8	240	200	132	180	150	110	68	2912	324
ACS880-01-260A-5	R8	260	200	132	240[1]	150	110	68	3325	324
ACS880-01-302A-5	R9	302	250	187.5	260	200	132	70	3663	677
ACS880-01-361A-5	R9	361	300	200	302	250	187.5	70	4781	677
ACS880-01-414A-5	R9	414[5]	350	250	361[2]	300	200	70	5672	677

* Heat Loss value is a reference for cabinet thermal design. Value is calculated to Ecodesign regulations based on 90% speed and 100% current.

	Frame Size	Light Duty use			Heavy Duty use			Noise Level dB(A)	Heat Loss W*	Air Flow cfm
		I_{LD}	P_{LD}	P_{LD}	I_{2HD}	P_{HD}	P_{HD}			
		A	Hp	kW	A	Hp	kW			
U_N = 600 V (range 525 to 690 V). Ratings are valid at nominal voltage 575 V, 60 Hz										
ACS880-01-07A4-7	R3	7	5	4	5.6	3	3	60	101	79
ACS880-01-09A9-7	R3	9.4	7.5	5.5	7.4	5	4	60	128	79
ACS880-01-14A3-7	R3	13.6	10	7.5	9.9	7.5	5.5	60	189	79
ACS880-01-019A-7	R3	18	15	11	14.3	10	7.5	60	271	79
ACS880-01-023A-7	R3	22	20	15	19	15	11	60	338	79
ACS880-01-027A-7	R3	27	25	18.5	23	20	15	60	426	79
ACS880-01-035A-7	R5	41	40	30	32	30	22	64	416	165
ACS880-01-042A-7	R5	52	50	37	41	40	30	64	524	165
ACS880-01-049A-7	R5	52	50	37	41	40	30	64	650	165
ACS880-01-061A-7	R6	62	60	45	52	50	37	68	852	256
ACS880-01-084A-7	R6	77	75	55	62	60	45	68	1303	256
ACS880-01-098A-7	R7	99	100	75	77	75	55	67	1416	265
ACS880-01-119A-7	R7	125	125	90	99	100	75	67	1881	265
ACS880-01-142A-7	R8	144	150	110	125	125	90	68	1970	324
ACS880-01-174A-7[4]	R8	180	200	132	144	150	110	68	2670	324
ACS880-01-210A-7	R9	242	250	160	192	200	132	70	2903	677
ACS880-01-271A-7	R9	271	250	200	242	250	160	70	4182	677

* Heat Loss value is a reference for cabinet thermal design. Value is calculated to Ecodesign regulations based on 90% speed and 100% current.

Notes:
Ratings apply at an ambient temperature of 40°C. At higher temperatures (up to 55°C) the derating is 1%/1°C.
1 30% overload for 1 minute every 5 minutes.
2 25% overload for 1 minute every 5 minutes
3 For drives with enclosure class UL Type 12 (IP55), the ratings apply at an ambient temperature of 40˚C. For higher ambient temperatures, the derating is 1%/1oC from 40 to 45˚C and 2.5%/1˚C from 45 to 55˚C.
4 This unit capable of delivering 192 amps continuous at 40˚C with no overload.
5 I_{Ld} is 414A at 30˚C ambient temperature and 393A at 40˚C ambient temperature. Drive can deliver 414A continuously with no overload at 40˚C
To achieve the rated motor power given in the table, the rated current of the drive must be higher than or equal to the rated motor current.

Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

E

Cabinet-built single drives
ACS880-07

—
01
ACS880-07 frame size R6 to R8, IP22
—
02
ACS880-07 frame size R9, IP22

—
01

—
02

Our cabinet-built single drives are built to order, meeting your needs regardless of the technical challenges. The drive configuration includes rectifier, DC link, inverter, fuses, line choke and a main switch, all built into a compact cabinet for easy assembly and commissioning.

The ACS880-07 offers a wide variety of standardized configurations for different application requirements, from line contactors to preventing unexpected motor starts. If the application requires more, ABB's Order-Based Engineering services can add special features to the standard product, such as an additional cabinet for customer-specific devices.

Drives up to frame size R11 are based on a compact single module including a rectifier and inverter. Larger drives consist of separate rectifier and inverter modules, providing redundancy with parallel connected units.
If one module needs to be disconnected, the drive can continue running at reduced power.

The robust design and enclosures up to IP54 make the ACS880-07 suitable for even very harsh environments.

Cabinet-built ACS880-07 drives
- Power ratings: 45 to 2800 kW
- Enclosure classes IP22 (as standard), IP42, and IP54 for different environments, with an option for air intake through the bottom of the cabinet and channeled air outlet on the top of the cabinet

Main options:
- Cabling solutions for the bottom and top entry and exit
- Functional safety modules, see page 70
- I/O extension modules, see page 63
- Communication protocol adapters, see page 63
- Speed feedback interfaces, see page 65
- Brake option inside the module or cabinet, see page 82
- C2 and C3 EMC filters, see page 73
- Du/dt and common mode filter options for motor protection, see page 90
- Marine construction option
- Cabinet light and heater option

The drives have an extensive selection of built-in features and options. See page 100.

Highlights
- Compact package for easy assembly and commissioning
- Available as an engineered, customer-specific solution
- All essential features are built-in
- Robust design verified by various standards

Type Code	Frame Size	Output Ratings						Noise level (dBA)	Heat Loss (kW)	Air flow (cfm)
		Light duty			Heavy duty					
		I_{Ld} (A)	P_{Ld} (Hp)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (Hp)	P_{Hd} (kW)			
U_N = 500 V (range 380 to 500V). Power ratings are valid at nominal voltage 480 V 60 Hz										
6-pulse diode bridge rectifier										
ACS880-07-0096A-5+C129	R6	96	75	55	77	60	45	67	1.8	838
ACS880-07-0124A-5+C129	R6	124	100	75	96	75	55	67	1.94	838
ACS880-07-0156A-5+C129	R7	156	125	90	124	100	75	67	2.44	838
ACS880-07-0180A-5+C129	R7	180	150	110	156	125	90	67	2.81	838
ACS880-07-0240A-5+C129	R8	240	200	132	180	150	110	67	3.8	838
ACS880-07-0260A-5+C129	R8	260	215	160	240*	200	132	65	4.44	838
ACS880-07-0302A-5+C129	R9	302	250	200	260	200	132	68	5.3	551
ACS880-07-0361A-5+C129	R9	361	300	200	302	250	200	68	6.5	551
ACS880-07-0414A-5+C129	R9	414	350	250	361**	300	200	68	4.9	551
ACS880-07-0460A-5+C129	R10	450	375	315	330	275	200	72	6.1	1413
ACS880-07-0503A-5+C129	R10	483	400	315	361	300	250	72	6.91	1413
ACS880-07-0583A-5+C129	R10	573	450	400	414	350	250	72	8.6	1413
ACS880-07-0635A-5+C129	R10	623	500	450	477	400	315	72	9.264	1413
ACS880-07-0715A-5+C129	R11	705	600	500	566	450	400	72	10.36	1413
ACS880-07-0820A-5+C129	R11	807	700	560	625	500	450	71	11.1	1413
ACS880-07-0880A-5+C129	R11	857	700	560	697	600	500	71	18	1413
ACS880-07-1070A-5+C129+H359[1]	D8T+2×R8i	1027	900	710	800	700	560	73	22	2055
ACS880-07-1320A-5+C129+F255+H359[1,2]	2×D8T+2×R8i	1267	1000	900	987	900	710	74	25.8	2740
ACS880-07-1450A-5+C129+F255+H359[1,2]	2×D8T+2×R8i	1392	1200	900	1085	900	710	74	25.8	2740
ACS880-07-1580A-5+C129+F255+H359[1,2]	2×D8T+2×R8i	1517	1250	1000	1182	1000	800	74	27	2740
ACS880-07-1800A-5+C129+F255+H359[1,2]	2×D8T+3×R8i	1728	1500	1200	1346	1100	900	75	32	3425
ACS880-07-1980A-5+C129+F255+H359[1,2]	2×D8T+3×R8i	1901	1500	1300	1481	1250	1000	75	36	3425
12-pulse connection [1,3,4]										
ACS880-07-0990A-5+A004+H359	2×D7T+2×R8i	950	800	630	741	600	500	73	16	2740
ACS880-07-1320A-5+A004+H359	2×D8T+2×R8i	1267	1000	900	987	900	710	74	22	2740
ACS880-07-1450A-5+A004+H359	2×D8T+2×R8i	1392	1200	900	1085	900	710	7	25	2740
ACS880-07-1580A-5+A004+H359	2×D8T+2×R8i	1517	1250	1000	1182	1000	800	74	27	2740
ACS880-07-1800A-5+A004+H359	2×D8T+3×R8i	1728	1500	1200	1346	1100	900	75	32	3425
ACS880-07-1980A-5+A004+H359	2×D8T+3×R8i	1901	1500	1300	1481	1250	1000	75	36	3425

Notes:
* 30% overload for 1 minute every 5 minutes
** 25% overload for 1 minute every 5 minutes
1 Common motor cubicle (H359) option is highly recommended, but can be removed (discount is shown in Option PRICING tables)
2 Air circuit breaker (F255) option is required with UL listed (C129) or CSA approved (C134) designs (if UL or CSA is not required, it can be removed; discount is shown in Option Pricing tables)
3 12-pulse ratings as shown are not UL listed or CSA approved as standard. UL listed / CSA approved designs are available as specially engineered cabinets. A Request For Quote must be submitted
4 Cabinet is a non-UL/CSA design which includes bottom cable entry and exit and European cable gland plates as standard

Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply at 40 °C ambient temperature. At higher temperatures (up to 50 °C), the derating is 1%/1 °C.
Operation above 150 Hz might require type specific derating.

F

Type Code	Frame Size	Output Ratings						Noise level (dBA)	Heat Loss (kW)	Air flow (cfm)
		Light duty			Heavy duty					
		I_{Ld} (A)	P_{Ld} (Hp)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (Hp)	P_{Hd} (kW)			
U_N = 600 V (range 525 to 600 V). Power ratings are valid at nominal voltage 575 V 60 Hz IMPORTANT: FOR 690V, DO NOT INCLUDE +C129										
ACS880-07-0061A-7+C129	R6	62	60	45	52	50	37	67	1.8	838
ACS880-07-0084A-7+C129	R6	77	75	55	62	60	45	67	1.94	838
ACS880-07-0098A-7+C129	R7	99	100	75	77	75	55	67	2.44	838
ACS880-07-0119A-7+C129	R7	125	125	90	99	100	75	67	2.81	838
ACS880-07-0142A-7+C129	R8	144	150	110	125	125	90	67	3.8	838
ACS880-07-0174A-7+C129	R8	180	200	132	144	150	110	65	4.44	838
ACS880-07-0210A-7+C129	R9	242	250	160	192	200	132	68	4.7	550
ACS880-07-0271A-7+C129	R9	271	250	200	242	250	160	68	5.3	550
ACS880-07-0330A-7+C129	R10	336	350	315	255	250	250	72	5.64	1413
ACS880-07-0370A-7+C129	R10	382	400	355	325	300	315	72	6.37	1413
ACS880-07-0430A-7+C129	R10	424	450	400	360*	350	355	72	7.57	1413
ACS880-07-0470A-7+C129	R11	472	500	450	415	450	400	72	6.61	1413
ACS880-07-0522A-7+C129	R11	528	550	500	455	450	450	72	7.39	1413
ACS880-07-0590A-7+C129	R11	571	600	560	505	500	500	71	8.97	1413
ACS880-07-0650A-7+C129	R11	630	700	630	571*	600	560	71	9.98	1519
ACS880-07-0721A-7+C129	R11	705	700	630	571*	600	560	71	11.17	1519
ACS880-07-0800A-7+C129+H3591	1×D8T+2×R8i	768	800	710	598	600	560	73	16	2055
ACS880-07-0900A-7+C129+H3591	1×D8T+2×R8i	864	900	800	673	700	630	74	20	2055
ACS880-07-1160A-7+C129+H3591	2×D8T+2×R8i	1114	1250	1100	868	900	800	74	26	2740
ACS880-07-1450A-7+C129+F255+H359[1,2]	2×D8T+3×R8i	1392	1500	1250	1085	1100	1000	75	32	3425
ACS880-07-1650A-7+C129+F255+H359[1,2]	2×D8T+3×R8i	1584	1750	1500	1234	1250	1200	75	36.5	3425
ACS880-07-1950A-7+C129+F255+H359[1,2]	3×D8T+4×R8i	1872	2000	1800	1459	1500	1400	76	44	4795
ACS880-07-2300A-7+C129+F255+H359[1,2]	3×D8T+4×R8i	2208	2250	2000	1720	1750	1600	76	52	4795
ACS880-07-2600A-7+C129+F255+H359[1,2]	4×D8T+5×R8i	2496	2700	2400	1945	2000	1900	78	58	6166
ACS880-07-2860A-7+C129+F255+H359[1,2]	4×D8T+5×R8i	2746	2900	2400	2139	2250	2000	78	65	6166
12-pulse connection [1,3,4]										
ACS880-07-0800A-7+A004+H359	2×D7T+2×R8i	768	800	710	598	600	560	73	16	2740
ACS880-07-0950A-7+A004+H359	2×D8T+2×R8i	912	900	800	711	700	630	74	20	2740
ACS880-07-1160A-7+A004+H359	2×D8T+2×R8i	1114	1250	1100	868	900	800	74	26	2740
ACS880-07-1450A-7+A004+H359	2×D8T+3×R8i	1392	1500	1250	1085	1100	1000	75	32	3425
ACS880-07-1650A-7+A004+H359	2×D8T+3×R8i	1584	1750	1500	1234	1250	1200	75	36.5	3425
ACS880-07-1950A-7+A004+H359	4×D8T+4×R8i	1872	2000	1800	1459	1500	1400	77	44	5480
ACS880-07-2300A-7+A004+H359	4×D8T+4×R8i	2208	2250	2000	1720	1750	1600	77	52	5480
ACS880-07-2600A-7+A004+H359	4×D8T+5×R8i	2496	2700	2400	1945	2000	1900	78	58	6166
ACS880-07-2860A-7+A004+H359	4×D8T+5×R8i	2746	2900	2400	2139	2250	2000	78	65	6166

Notes:
* 44% overload for 1 minute every 5 minutes
1 Common motor cubicle (H359) option is highly recommended, but can be removed (discount is shown in Option PRICING tables)
2 Air circuit breaker (F255) option is required with UL listed (C129) or CSA approved (C134) designs (if UL or CSA is not required, it can be removed; discount is shown in Option Pricing tables)
3 12-pulse ratings as shown are not UL listed or CSA approved as standard. UL listed / CSA approved designs are available as specially engineered cabinets. A Request For Quote must be submitted
4 Cabinet is a non-UL/CSA design which includes bottom cable entry and exit and European cable gland plates as standard

Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply at 40 °C ambient temperature. At higher temperatures (up to 50 °C), the derating is 1%/1 °C.
Operation above 150 Hz might require type specific derating.

Regenerative drives
ACS880-11 and ACS880-17

Energy savings
The ACS880-11/17 regenerative drives are a compact and complete regenerative drive solution, with everything you need for regenerative operation in cyclic or continuous braking applications. Such applications include cranes, elevators, centrifuges, downhill conveyors, and test benches. With regenerative functionality, the braking energy of the motor is returned to the drive and distributed to the supply network so that it can be utilized by other equipment. Compared to mechanical or resistor braking, where braking energy is wasted as heat, regenerative drive operation offers significant energy consumption and cooling savings.

The ACS880 regenerative drives achieve a unity power factor, indicating that electrical energy is being used efficiently. There's a possibility to increase system efficiency even further with common DC solutions by sharing braking energy between multiple drives through a DC link.

Possibility to regenerate 100% of power continuously

Minimized downtime
The ACS880 regenerative drive offers immunity to network disturbances. The drive will not interrupt the process or affect its quality in unstable supply network conditions. The drive's active supply unit can boost the output voltage to enable full motor voltage, even when the supply voltage is below nominal. This ensures reliable operation in weak networks. This voltage boost capability can also be utilized to overcome voltage drops caused by long supply or motor cables.

Optimized cost and space
Everything needed for regenerative operation, such as an active supply unit and a low harmonic line filter are integrated into the drive, and no external braking devices are needed.

Advantages:
- Quick, easy drive installation
- Small installation footprint
- No need to add cooling to handle the heat generated by mechanical or resistor braking
- Simplified wiring
- Less spare parts needed

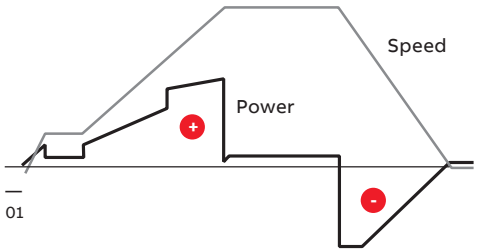
The "all inside" design helps to cut engineering and assembly time, as well as to reduce equipment costs and the risk of errors.

The drive's voltage boost capability can be an advantage in motor sizing. With a higher motor voltage, the same power is achieved with less current, which improves motor efficiency and may allow a smaller motor to be used.

The drive can provide network power factor correction to compensate for the low power factors of connected equipment. It reduces the need for additional power factor correction equipment, including filters and large capacitor banks. It can also help reduce penalty charges from electrical utilities for poor power factors.

Maximized motor performance and efficiency
The drive can provide full motor voltage even if the supply voltage fluctuates and is capable of 100% current regeneration continuously.

The drive features Direct Torque Control (DTC) as standard, making it suitable for very demanding applications. DTC provides precise speed and torque control for maximum motor performance and motor efficiency.



01
Speed and power curves in cyclic operation

Clean supply network
The drive produces exceptionally low harmonic content and exceeds the requirements of harmonic guidance/standards including IEEE 519, IEC61000-3-2, IEC61000-3-12, IEC61000-3-4, and G5/4. Compared to a conventional drive, the harmonic content is reduced by up to 97%. The total harmonic current distortion is typically <3% in a nominal and undistorted network.

For more information, visit https://new.abb.com/drives/regenerativedrives.

Wall-mounted regenerative drives, ACS880-11
- Power ratings: 5 to 150 Hp
- Enclosure classes: IP20 for cabinet mounting, IP21 (as standard) for wall mounting, and UL (NEMA) Type 12 / IP55 for dusty and wet environments

Main options:
- Flange (push-through) mounting
- C2 and C3 EMC filters, see page 73
- I/O extension modules, see page 63
- Communication protocol adapters, see page 63
- Speed feedback interfaces, see page 65
- Functional safety modules, see page 70
- Remote monitoring tool, see page 66
- Application specific software, see page 20

Cabinet-built regenerative drives, ACS880-17
- Power ratings: 60 to 3300 Hp
- Enclosure classes: UL (NEMA) Type Open, Type 1, & Type 12 / IP22 (as standard), IP42, & IP54 for different environments, with an option for air intake through the bottom of the cabinet and channeled air outlet on the top of the cabinet

Main options:
- EMC filters, see page 65 (as standard for nxR8i)
- Cabling solutions for the bottom and top entry and exit
- Functional safety modules, see page 70
- I/O extension modules, see page 63
- Communication protocol adapters, see page 63
- Speed feedback interfaces, see page 65
- Du/dt and common mode filter options for motor protection, see page 90
- Marine construction option
- Cabinet light and heater option

The drives have an extensive selection of built-in features and options. See page 100.

Highlights
- Can regenerative operation is in one compact package. Designed for easy installation
- Can regenerate 100% power continuously
- The total harmonic current distortion is typically <3% in the nominal and undistorted networks
- Energy savings compared to other braking methods
- Reduced cost of ownership
- Unity power factor. Can correct for network power factor
- Stable output voltage in all load conditions, even with fluctuating supply voltage
- DC voltage boost to compensate for a voltage drop caused by an output filter or long motor cables, and to ensure full motor supply voltage
- Increased system efficiency with common DC solutions
- Circuit Breaker branch circuit protection certified by UL (see hardware manual) for ACS880-31 drives.


Remote Condition Monitoring
Condition indicators
Stress level (Cond.)
Reliability (Cond.)
Environment (Feedback)
Current (Inverter) temperature
Speed
Power
Current
Torque

Ratings, types and voltages

Wall-mounted regenerative drives, ACS880-11

Drive Type	Frame Size	Light Duty use			Heavy Duty use			Noise Level dB(A)	Heat Loss W*	Air Flow cfm
		I_{LD}	P_{LD}	P_{LD}	I_{2HD}	P_{HD}	P_{HD}			
		A	Hp	kW	A	Hp	kW			
U_N = 500 VAC (range 380 to 500 VAC). Power ratings are valid at nominal voltage 480 VAC, 60 Hz										
ACS880-11-07A6-5	R3	7.6	5	4	5.2	3	2.2	57	219	212
ACS880-11-11A0-5	R3	11	7.5	5.5	7.6	5	4	57	278	212
ACS880-11-014A-5	R3	14	10	7.5	11	7.5	5.5	57	321	212
ACS880-11-021A-5	R3	21	15	11	14	10	7.5	57	473	212
ACS880-11-027A-5	R6	27	20	15	21	15	11	71	625	324
ACS880-11-034A-5	R6	34	25	18.5	27	20	15	71	711	324
ACS880-11-040A-5	R6	40	30	22	34	25	18.5	71	807	324
ACS880-11-052A-5	R6	52	40	30	40	30	22	71	960	324
ACS880-11-065A-5	R6	65	50	37	52	40	30	71	1223	324
ACS880-11-077A-5	R6	77	60	45	65	50	37	71	1560	324
ACS880-11-101A-5	R8	96	75	55	77	60	45	68	1995	506**
ACS880-11-124A-5	R8	124	100	75	96	75	55	68	2800	506**
ACS880-11-156A-5	R8	156	125	90	124	100	75	68	3168	506**
ACS880-11-180A-5	R8	180	150	110	156	125	90	68	3872	506**

* Heat Loss value is a reference for cabinet thermal design. Value is calculated to Ecodesign regulations based on 90% speed and 100% current.

** UL Type 1 Drive. Type 12 cfm is 537.

Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply at 40 °C ambient temperature.
At higher temperatures (up to 55 °C) the derating is 1%/1 °C.

G

Ratings, types and voltages

Cabinet-built regenerative drives, ACS880-17

Type Code	Frame Size	Output Ratings						Noise level (dBA)	Heat Loss (kW)	Air flow (cfm)
		Light duty			Heavy duty					
		I_{Ld} (A)	P_{Ld} (Hp)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (Hp)	P_{Hd} (kW)			
UN = 500 V (range 380 to 500V). Power ratings are valid at nominal voltage 480 V 60 Hz										
ACS880-17-0101A-5+C129	R8	96	75	55	77	60	45	70	2.32	412
ACS880-17-0124A-5+C129	R8	124	100	75	96	75	55	70	3.14	412
ACS880-17-0156A-5+C129	R8	156	125	90	124	100	75	70	3.54	412
ACS880-17-0180A-5+C129	R8	180	150	110	156	125	90	70	4.27	474
ACS880-17-0260A-5+C129	R11	260	200	160	240	150	132	77	6.86	1279
ACS880-17-0302A-5+C129	R11	302	250	200	260	200	132	77	8.5	1279
ACS880-17-0361A-5+C129	R11	361	300	200	302	250	160	77	8.5	1279
ACS880-17-0414A-5+C129	R11	414	350	250	361	300	200	77	10.51	1279
ACS880-17-0460A-5+C129	R11	430	350	315	414	350	250	77	13.15	1279
ACS880-17-0503A-5+C129	R11	483	400	355	483	400	315	77	14.76	1279
ACS880-17-0420A-5+C129	1xR8i+1xR8i	403	300	250	314	250	200	75	11	1680
ACS880-17-0570A-5+C129	1xR8i+1xR8i	547	450	355	426	350	250	75	15	1680
ACS880-17-0780A-5+C129	1xR8i+1xR8i	749	600	500	583	500	400	75	21	1680
ACS880-17-1010A-5+C129+H359[1]	2xR8i+2xR8i	970	800	630	755	600	500	77	27	3370
ACS880-17-1110A-5+C129+H359[1]	2xR8i+2xR8i	1066	900	710	830	700	560	77	28	3370
ACS880-17-1530A-5+C129+H359[1]	2xR8i+2xR8i	1469	1250	1000	1144	1000	800	77	41	3370
ACS880-17-1980A-5+C129+H359[1]	3xR8i+3xR8i	1901	1500	1300	1481	1250	1000	78	51	5050
ACS880-17-2270A-5+C129+H359[1]	3xR8i+3xR8i	2179	1900	1500	1698	1500	1200	78	60	5050

Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

Ratings, types and voltages
Cabinet-built regenerative drives, ACS880-17

Type Code	Frame Size	Output Ratings						Heat Loss (kW)	Air flow (cfm)
		Light duty			Heavy duty				
		I_{Ld} (A)	P_{Ld} (Hp)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (Hp)	P_{Hd} (kW)		
U_N = 600 V (range 525 to 600 V). Power ratings are valid at nominal voltage 575 V 60 Hz IMPORTANT: FOR 690V, DO NOT INCLUDE +C129									
ACS880-17-0174A-7+C129	R11	168	175	160	144	150	132	77	1279
ACS880-17-0210A-7+C129	R11	200	200	200	174	175	160	77	1279
ACS880-17-0271A-7+C129	R11	257	250	250	210	200	200	77	1279
ACS880-17-0330A-7+C129	R11	320	300	315	271	250	250	77	1279
ACS880-17-0370A-7+C129	R11	360	350	355	330	300	315	77	1279
ACS880-17-0430A-7+C129	R11	420	450	400	370	350	355	77	1279
ACS880-17-0320A-7+C129	1xR8i+1xR8i	307	300	250	239	250	200	75	1680
ACS880-17-0390A-7+C129	1xR8i+1xR8i	374	350	355	292	300	250	75	1680
ACS880-17-0580A-7+C129	1xR8i+1xR8i	557	600	500	434	450	400	75	1680
ACS880-17-0660A-7+C129+H359[1]	2xR8i+2xR8i	634	600	560	494	500	450	77	3370
ACS880-17-0770A-7+C129+H359[1]	2xR8i+2xR8i	739	700	710	576	600	560	77	3370
ACS880-17-0950A-7+C129+H359[1]	2xR8i+2xR8i	912	1000	800	711	700	710	77	3370
ACS880-17-1130A-7+C129+H359[1]	2xR8i+2xR8i	1085	1100	1000	845	1000	800	77	3370
ACS880-17-1450A-7+C129+H359[1]	3xR8i+3xR8i	1392	1500	1300	1085	1100	1000	78	5050
ACS880-17-1680A-7+C129+H359[1]	3xR8i+3xR8i	1613	1750	1500	1257	1250	1200	78	5050
ACS880-17-1950A-7+C129+H359[1]	4xR8i+4xR8i	1872	2000	1800	1459	1500	1400	79	6730
ACS880-17-2230A-7+C129+H359[1]	4xR8i+4xR8i	2141	2250	2000	1668	1750	1600	79	6730
ACS880-17-2770A-7+C129+H359[1]	6xR8i+5xR8i	2659	2900	2600	2072	2250	2000	79	8420
ACS880-17-3310A-7+C129+H359[1]	6xR8i+6xR8i	3178	3300	3000	2476	2700	2400	79	10100

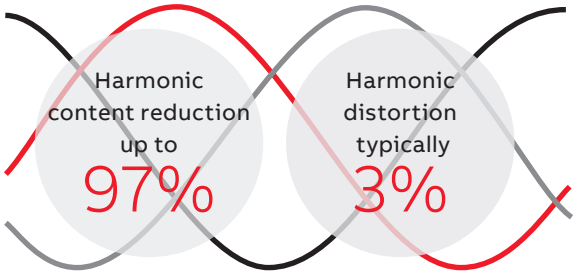
Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply at 40 °C ambient temperature.
At higher temperatures (up to 50 °C) the derating is 1%/1 °C. Operation above 150 Hz might require type-specific derating.

Ultra-low harmonic drives
ACS880-31 and ACS880-37

Harmonic distortion can disturb or even damage sensitive equipment connected in the same electrical environment. Harmonics also cause additional losses in the network.

Clean supply network
The drive produces exceptionally low harmonic content and exceeds the requirements of harmonic guidance/standards of IEEE 519, IEC61000-3-2, IEC61000-3-12, IEC61000-3-4, and G5/4. Compared to a conventional drive, the harmonic content is reduced by up to 97%. The total harmonic current distortion is typically <3% in a nominal and undistorted network. A common DC solution introduces a cost-efficient way of keeping the supply network clean in the installation of multiple drives.



Keeps the network clean

Minimized downtime
The ACS880 ultra-low harmonic drive offers immunity to network disturbances. The drive will not interrupt the process or affect its quality in unstable supply network conditions. The drive's active supply unit can boost the output voltage to enable full motor voltage, even when the supply voltage is below nominal. This ensures reliable operation in weak networks. This voltage boost capability can also be utilized to overcome voltage drops caused by long supply or motor cables. The ability to stabilize the output voltage of the drive is an advantage compared to alternative low harmonic solutions where voltage cannot be boosted.

Optimized cost and space
The compact drive features built-in harmonic mitigation. This includes an active supply unit and a low harmonic line filter. As there is no need for external filters, multi-pulse arrangements, or special transformers, the simple installation offers significant space, time and cost savings.

Lower harmonic currents reduce the need to oversize transformers, cables and protective equipment saving cost and reducing heat dissipation. The drive's voltage boost capability can be an advantage in motor sizing. With a higher motor voltage, the same power is achieved with a lower current, which improves motor efficiency, and may allow a smaller motor to be used.

Maximized motor performance and efficiency
The drive can provide full motor voltage even if the supply voltage fluctuates. It features direct torque control (DTC) as standard, making it suitable for very demanding applications as well. DTC provides precise speed and torque control for maximum motor performance and motor efficiency.

Reduces the total cost of ownership

Efficient energy utilization
The ACS880 ultra-low harmonic drives achieve a unity power factor, indicating that electrical energy is being used efficiently.

The drive can provide network power factor correction to compensate for the low power factor of connected equipment. It can help reduce penalty charges set by electrical utilities for poor power factor.

Lower harmonics and full motor voltage at all times means reduced system losses and better overall system efficiency.

For more information, visit http://new.abb.com/drives/harmonics.

Wall-mounted ultra-low harmonic drives, ACS880-31

- Power ratings: 5 to 150 Hp (2.2 to 110 kW)
- Enclosure classes: UL (NEMA) Type 1 / IP20 for cabinet mounting, UL (NEMA) Type 1 unfiltered / IP21 (as standard) for wall mounting, and UL (NEMA) Type 12 / IP55 for dusty and wet environments

Main options:

- Flange (pull-through) mounting
- C2 and C3 EMC filters, see page 73
- I/O extension modules, see page 63
- Communication protocol adapters, see page 58
- Speed feedback interfaces, see page 65
- Functional safety modules, see page 70
- Remote monitoring tool, see page 66
- Application-specific software, see page 20

Cabinet-built ultra-low harmonic drives, ACS880-37

- Power ratings: 60 to 3300 Hp (45 to 3200 kW)
- Enclosure classes: UL (NEMA) Type 1, Type 12 / IP22 (as standard), IP42, and IP54 for different environments, with an option for air intake through the bottom of the cabinet and channeled air outlet on the top of the cabinet

Main options:

- EMC filters, see page 65 (as standard for nxR8i)
- Cabling solutions for the bottom and top entry and exit
- Functional safety modules, see page 70
- I/O extension modules, see page 63
- Communication protocol adapters, see page 63
- Speed feedback interfaces, see page 65
- Du/dt and common mode filter options for motor protection, see page 90
- Marine construction option
- Cabinet light and heater option

The drives have an extensive selection of built-in features and options. See page 100.

Highlights

- The total harmonic current distortion is typically <3% in nominal and undistorted networks. Low harmonic content also at partial loads
- “All inside” design: no need for external filters, multi-pulse arrangements, or special transformers
- Simple and cost-effective installation
- Unity power factor. Capable of network power factor correction
- Small installation footprint
- Output voltage stabilization provides operation in weak networks
- DC voltage boost to compensate for a voltage drop caused by an output filter or long motor cables, and to ensure full motor supply voltage
- Increased system efficiency with lower component losses due to a very low level of harmonics
- Circuit Breaker branch circuit protection certified by UL (see hardware manual) for ACS880-31 drives.


Local
ACS880
1400.0 Rpm
Save money
Save energy
Save nerves
Save all
Exit
Select
Stop
Loc/Rem
Start
?

Ratings, types and voltages

Wall-mounted ultra-low harmonic drives, ACS880-31

Type code	Frame Size	Light Duty use			Heavy Duty use			Noise Level	Heat Loss	Air Flow
		I_{LD}	P_{LD}	P_{LD}	I_{2HD}	P_{HD}	P_{HD}			
		A	Hp	kW	A	Hp	kW	dB(A)	W*	cfm
U_N = 500 VAC (range 380 to 500 VAC). Power ratings are valid at nominal voltage 480 VAC, 60 Hz										
ACS880-31-07A6-5	R3	7.6	5	4	5.2	3	2.2	57	219	212
ACS880-31-11A0-5	R3	11	7.5	5.5	7.6	5	4	57	278	212
ACS880-31-014A-5	R3	14	10	7.5	11	7.5	5.5	57	321	212
ACS880-31-021A-5	R3	21	15	11	14	10	7.5	57	473	212
ACS880-31-027A-5	R6	27	20	15	21	15	11	71	625	324
ACS880-31-034A-5	R6	34	25	18.5	27	20	15	71	711	324
ACS880-31-040A-5	R6	40	30	22	34	25	18.5	71	807	324
ACS880-31-052A-5	R6	52	40	30	40	30	22	71	960	324
ACS880-31-065A-5	R6	65	50	37	52	40	30	71	1223	324
ACS880-31-077A-5	R6	77	60	45	65	50	37	71	1560	324
ACS880-31-101A-5	R8	96	75	55	77	60	45	68	1995	506**
ACS880-31-124A-5	R8	124	100	75	96	75	55	68	2800	506**
ACS880-31-156A-5	R8	156	125	90	124	100	75	68	3168	506**
ACS880-31-180A-5	R8	180	150	110	156	125	90	68	3872	506**

* Heat Loss value is a reference for cabinet thermal design. Value is calculated to Ecodesign regulations based on 90% speed and 100% current.
** UL Type 1 Drive. Type 12 cfm is 537.

Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply at 40 °C ambient temperature.
At higher temperatures (up to 55 °C) the derating is 1%/1 °C.

Ratings, types and voltages

Cabinet-built ultra-low harmonic drives, ACS880-37

Type Code	Frame Size	Output Ratings						Noise level (dBA)	Heat (kW)	Air flow (cfm)
		Light duty			Heavy duty					
		I_{Ld} (A)	P_{Ld} (Hp)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (Hp)	P_{Hd} (kW)			
U_N = 500 V (range 380 to 500V). Power ratings are valid at nominal voltage 480 V 60 Hz										
ACS880-37-0101A-5+C129	R8	96	75	55	77	60	45	70	2.32	412
ACS880-37-0124A-5+C129	R8	124	100	75	96	75	55	70	3.14	412
ACS880-37-0156A-5+C129	R8	156	125	90	124	100	75	70	3.54	412
ACS880-37-0180A-5+C129	R8	180	150	110	156	125	90	70	4.27	412
ACS880-37-0260A-5+C129	R11	260	200	160	240	150	132	77	6.86	1279
ACS880-37-0302A-5+C129	R11	302	250	200	260	200	132	77	8.5	1279
ACS880-37-0361A-5+C129	R11	361	300	200	302	250	160	77	8.5	1279
ACS880-37-0414A-5+C129	R11	414	350	250	361	300	200	77	10.51	1279
ACS880-37-0460A-5+C129	R11	430	350	315	414	350	250	77	13.15	1279
ACS880-37-0503A-5+C129	R11	483	400	355	483	400	315	77	14.76	1279
ACS880-37-0420A-5+C129	1xR8i+1xR8i	403	300	250	314	250	200	75	11	1680
ACS880-37-0570A-5+C129	1xR8i+1xR8i	547	450	355	426	350	250	75	15	1680
ACS880-37-0780A-5+C129	1xR8i+1xR8i	749	600	500	583	500	400	75	21	1680
ACS880-37-1010A-5+C129+H3591	2xR8i+2xR8i	970	800	630	755	600	500	77	27	3370
ACS880-37-1110A-5+C129+H3591	2xR8i+2xR8i	1066	900	710	830	700	560	77	28	3370
ACS880-37-1530A-5+C129+H3591	2xR8i+2xR8i	1469	1250	1000	1144	1000	800	77	41	3370
ACS880-37-1980A-5+C129+H3591	3xR8i+3xR8i	1901	1500	1300	1481	1250	1000	78	51	5050
ACS880-37-2270A-5+C129+H3591	3xR8i+3xR8i	2179	1900	1500	1698	1500	1200	78	60	5050

Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

H

Ratings, types and voltages

Cabinet-built ultra-low harmonic drives, ACS880-37

Type Code	Frame Size	Output Ratings						Noise level (dBA)	Heat (kW)	Air flow (cfm)
		Light duty			Heavy duty					
		I_{Ld} (A)	P_{Ld} (Hp)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (Hp)	P_{Hd} (kW)			
U_N = 600 V (range 525 to 600 V). Power ratings are valid at nominal voltage 575 V 60 Hz IMPORTANT: FOR 690V, DO NOT INCLUDE +C129										
ACS880-37-0174A-7+C129	R11	168	175	160	144	150	132	77	6.86	1279
ACS880-37-0210A-7+C129	R11	200	200	200	174	175	160	77	8.46	1279
ACS880-37-0271A-7+C129	R11	257	250	250	210	200	200	77	10.49	1279
ACS880-37-0330A-7+C129	R11	320	300	315	271	250	250	77	13.09	1279
ACS880-37-0370A-7+C129	R11	360	350	355	330	300	315	77	14.71	1279
ACS880-37-0430A-7+C129	R11	420	450	400	370	350	355	77	16.53	1279
ACS880-37-0320A-7+C129	1xR8i+1xR8i	307	300	250	239	250	200	75	13	1680
ACS880-37-0390A-7+C129	1xR8i+1xR8i	374	350	355	292	300	250	75	16	1680
ACS880-37-0580A-7+C129	1xR8i+1xR8i	557	600	500	434	450	400	75	23	1680
ACS880-37-0660A-7+C129+H3591	2xR8i+2xR8i	634	600	560	494	500	450	77	26	3370
ACS880-37-0770A-7+C129+H3591	2xR8i+2xR8i	739	700	710	576	600	560	77	29	3370
ACS880-37-0950A-7+C129+H3591	2xR8i+2xR8i	912	1000	800	711	700	710	77	38	3370
ACS880-37-1130A-7+C129+H3591	2xR8i+2xR8i	1085	1100	1000	845	1000	800	77	44	3370
ACS880-37-1450A-7+C129+H3591	3xR8i+3xR8i	1392	1500	1300	1085	1100	1000	78	54	5050
ACS880-37-1680A-7+C129+H3591	3xR8i+3xR8i	1613	1750	1500	1257	1250	1200	78	64	5050
ACS880-37-1950A-7+C129+H3591	4xR8i+4xR8i	1872	2000	1800	1459	1500	1400	79	80	6730
ACS880-37-2230A-7+C129+H3591	4xR8i+4xR8i	2141	2250	2000	1668	1750	1600	79	88	6730
ACS880-37-2770A-7+C129+H3591	6xR8i+5xR8i	2659	2900	2600	2072	2250	2000	79	113	8420
ACS880-37-3310A-7+C129+H3591	6xR8i+6xR8i	3178	3300	3000	2476	2700	2400	79	132	10100

Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply at 40 °C ambient temperature.
At higher temperatures (up to 50 °C) the derating is 1%/1 °C. Operation above 150 Hz might require type-specific derating.
[1)] Values to be confirmed upon full sales release of the product. Please contact ABB for further information.

Liquid-cooled drives
ACS880-07LC, ACS880-07CLC, ACS880-17LC, ACS880-37LC

The compact and robust liquid-cooled cabinet drives are the ultimate solution for various applications where space savings, silent operation, or durability in harsh environments is a must.

The Single drives with diode supply units consist of extremely compact diode supply and inverter units with parallel connected modules. The small footprint enables significant space and weight reduction.

Addition single drives with diode supply units the extensive ACS880 liquid-cooled offering includes low harmonic and regenerative variants.

Built-in redundancy through parallel connected modules enables higher drive availability and greater process uptime. If one of the modules is not operating or is being maintained, the drive will continue to operate at partial load.

Advanced liquid cooling and optimal design
Direct liquid cooling offers easy heat transfer without air filtering problems. Since the coolant takes care of 98% of the heat losses, no additional filtered air cooling is needed.
This increases the total efficiency of the drive installation.

For harsh environmental conditions

Robust solution for different environments
The enclosed cabinet structure makes the ACS880 liquid-cooled drives perfect for harsh environmental conditions.

The offering fulfills marine and offshore requirements and the drives have marine-type approvals from various key classification bodies.

As direct liquid cooling enables silent operation, the ACS880 liquid-cooled drives are suitable for applications where noise levels are an important environmental factor.

Robust, reliable, and compact

Simple and cost-efficient installation
The high-efficient liquid cooling removes the need for air-conditioning in the installation rooms, bringing the installation and operation costs down. As there is no need for additional air conditioning devices or air ducts, the installation is significantly simplified.

The used coolant type is Antifrogen® L, by Clariant International Ltd, cooling liquid with glycol and inhibitor. It is a ready-made, commercially available mix, which enables easy commissioning and maximized process uptime.

Liquid-cooled ACS880-07LC and ACS880-07CLC drives
- Power ratings: 250 to 6000 kW
- Enclosure classes: IP42 (as standard) and IP54

Main options:
- Optional liquid cooling unit (LCU) for single, redundant, and tandem pump versions
- I/O extension modules, see page 62
- Communication protocol adapters, see page 62
- Emergency stop category 0 with opening main contactor/breaker
- Earth fault monitoring, unearthed mains (IT)

ACS880-07LC:
- Designed for industrial use
- 6- or 12-pulse solution
- Internal charging circuit for the drive

ACS880-07CLC:
- Extremely compact design focused on marine use
- 6-, 12- or 24-pulse solution

Liquid-cooled regenerative ACS880-17LC and ultra-low-harmonic ACS880-37LC drives
- Power ratings: 250 to 6000 kW
- Enclosure classes: IP42 (as standard) and IP54

Main options:
- Optional liquid cooling unit (LCU) for single, redundant and tandem pump versions
- Cabling solutions for the bottom and top entry and exit
- I/O extension modules, see page 63
- Communication protocol adapters, see page 63

For more information on regenerative functionality see page 36 and on harmonics see page 42.

The drives have an extensive selection of built-in features and options. See page 100.

Highlights
- Advanced liquid cooling which reduces the need for air cooling in installation rooms
- High power density with a compact and robust design
- Commercially available coolant mix, Antifrogen L
- Redundancy through parallel connected modules prevents unwanted process interruptions
- Low harmonic and regenerative variants
- Silent operation
- Suitable for harsh environments
- Marine approvals from various key classification bodies.

Ratings, types and voltages

Liquid-cooled drives, ACS880-07LC

U_N = 690 V (range 525 to 690 V). The power ratings are valid at nominal voltage 690 V (366 to 5446 kVA).

Drive type	Frame size	Nominal ratings			Light overload use		Heavy-duty use		Noise level (dB(A))	Coolant heat loss P_{loss} (kW)	Coolant volume (l)	Coolant flow rate (l/min)
		I_N (A)	I_{MAX} (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)				
Liquid-cooled diode supply units (DSU), ACS880-304LC												
6-pulse diode												
ACS880-07LC-0390A-7	1xD8T + 1xR8i	390	585	355	374	355	292	250	67	10	15	52
ACS880-07LC-0430A-7	1xD8T + 1xR8i	430	645	400	413	355	322	250	67	11	15	52
ACS880-07LC-0480A-7	1xD8T + 1xR8i	480	720	450	461	400	359	315	67	12	15	52
ACS880-07LC-0530A-7	1xD8T + 1xR8i	530	795	500	509	450	396	355	67	13	15	52
ACS880-07LC-0600A-7	1xD8T + 1xR8i	600	900	560	576	560	449	400	67	14	15	52
ACS880-07LC-0670A-7	1xD8T + 1xR8i	670	1005	630	643	630	501	450	67	16	15	52
ACS880-07LC-0750A-7	1xD8T + 1xR8i	750	1125	710	720	710	561	500	67	18	15	52
ACS880-07LC-0850A-7	1xD8T + 1xR8i	850	1275	800	816	800	636	560	67	20	15	52
ACS880-07LC-1030A-7	1xD8T + 2xR8i	1030	1545	1000	989	900	770	710	69	23	18	68
ACS880-07LC-1170A-7	1xD8T + 2xR8i	1170	1755	1100	1123	1100	875	800	69	27	18	68
ACS880-07LC-1310A-7	2xD8T + 2xR8i	1310	1965	1200	1258	1200	980	900	69	30	19	82
ACS880-07LC-1470A-7	2xD8T + 2xR8i	1470	2205	1400	1411	1200	1100	1000	69	34	19	82
ACS880-07LC-1660A-7	2xD8T + 2xR8i	1660	2490	1600	1594	1400	1242	1200	69	39	19	82
ACS880-07LC-1940A-7	2xD8T + 3xR8i	1940	2910	1800	1862	1800	1451	1400	71	43	22	98
ACS880-07LC-2180A-7	2xD8T + 3xR8i	2180	3270	2000	2093	2000	1631	1400	71	49	22	98
ACS880-07LC-2470A-7	3xD8T + 3xR8i	2470	3705	2300	2371	2300	1848	1800	71	56	26	118
ACS880-07LC-2880A-7	3xD8T + 4xR8i	2880	4320	2700	2765	2700	2154	2000	72	65	29	134
ACS880-07LC-3260A-7	3xD8T + 4xR8i	3260	4890	3000	3130	3000	2438	2300	72	75	29	134
ACS880-07LC-3580A-7	4xD8T + 5xR8i	3580	5370	3400	3437	3200	2678	2600	73	81	37	172
ACS880-07LC-4050A-7	4xD8T + 5xR8i	4050	6075	3800	3888	3800	3029	2800	74	94	37	172
ACS880-07LC-4840A-7	5xD8T + 6xR8i	4840	7260	4400	4646	4400	3620	3500	74	115	44	208
ACS880-07LC-5650A-7	6xD8T + 7xR8i	5650	8475	5200	5424	5200	4226	4000	75	129	49	238
ACS880-07LC-6460A-7	6xD8T + 8xR8i	6460	9690	6000	6202	6000	4832	4700	75	147	52	254
12-pulse diode [1]												
ACS880-07LC-0530A-7+A004	2xD8T + 1xR8i	530	795	500	509	450	474	355	67	13	19	74
ACS880-07LC-0600A-7+A004	2xD8T + 1xR8i	600	900	560	576	560	536	400	67	15	19	74
ACS880-07LC-0670A-7+A004	2xD8T + 1xR8i	670	1005	630	643	630	599	450	67	16	19	74
ACS880-07LC-0750A-7+A004	2xD8T + 1xR8i	750	1125	710	720	710	670	500	67	19	19	74
ACS880-07LC-0850A-7+A004	2xD8T + 1xR8i	850	1275	800	816	800	760	560	67	21	19	74
ACS880-07LC-1030A-7+A004	2xD8T + 2xR8i	1030	1545	1000	989	900	921	710	69	23	23	90
ACS880-07LC-1170A-7+A004	2xD8T + 2xR8i	1170	1755	1100	1123	1100	1046	800	69	26	23	90
ACS880-07LC-1310A-7+A004	2xD8T + 2xR8i	1310	1965	1200	1258	1200	1171	900	69	30	23	90
ACS880-07LC-1470A-7+A004	2xD8T + 2xR8i	1470	2205	1400	1411	1200	1314	1000	69	34	23	90
ACS880-07LC-1660A-7+A004	2xD8T + 2xR8i	1660	2490	1600	1594	1400	1484	1200	69	39	23	90
ACS880-07LC-1940A-7+A004	2xD8T + 3xR8i	1940	2910	1800	1862	1800	1734	1400	71	43	26	106
ACS880-07LC-2180A-7+A004	2xD8T + 3xR8i	2180	3270	2000	2093	2000	1949	1400	71	49	26	106
ACS880-07LC-2470A-7+A004	4xD8T + 3xR8i	2470	3705	2300	2371	2300	2208	1800	71	57	30	140
ACS880-07LC-2880A-7+A004	4xD8T + 4xR8i	2880	4320	2700	2765	2700	2575	2000	72	65	34	156
ACS880-07LC-3260A-7+A004	4xD8T + 4xR8i	3260	4890	3000	3130	3000	2914	2300	72	76	34	156
ACS880-07LC-3580A-7+A004	4xD8T + 5xR8i	3580	5370	3400	3437	3200	3200	2600	73	81	37	172
ACS880-07LC-4050A-7+A004	4xD8T + 5xR8i	4050	6075	3800	3888	3800	3620	2800	74	94	37	172
ACS880-07LC-4840A-7+A004	6xD8T + 6xR8i	4840	7260	4400	4646	4400	4327	3500	74	111	45	222
ACS880-07LC-5650A-7+A004	6xD8T + 7xR8i	5650	8475	5200	5424	5200	5051	4000	75	129	49	238
ACS880-07LC-6460A-7+A004	6xD8T + 8xR8i	6460	9690	6000	6202	6000	5775	4700	75	147	52	254

[1] +A004 is option code for 12-pulse half controlled rectifier bridge

Ratings, types and voltages
Liquid-cooled drives, ACS880-07CLC

U_N = 690 V (range 525 to 690 V). The power ratings are valid at nominal voltage 690 V (250 to 6000 kW).

Drive type	Frame size	Nominal ratings			Light overload use		Heavy-duty use		Noise level	Coolant heat loss	Coolant volume	Coolant flow rate
		I_N (A)	I_{MAX} (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	(dB(A))	P_{loss} (kW)	(l)	(l/min)
6-pulse diode												
ACS880-07CLC-0390A-7	1xD8D + 1xR8i	390	585	355	374	355	292	250	66	9.7	7.1	28
ACS880-07CLC-0430A-7	1xD8D + 1xR8i	430	645	400	413	355	322	250	66	10	7.1	28
ACS880-07CLC-0480A-7	1xD8D + 1xR8i	480	720	450	461	400	359	315	66	12	7.1	28
ACS880-07CLC-0530A-7	1xD8D + 1xR8i	530	795	500	509	450	396	355	66	13	7.1	28
ACS880-07CLC-0600A-7	1xD8D + 1xR8i	600	900	560	576	560	449	400	66	14	7.1	28
ACS880-07CLC-0670A-7	1xD8D + 1xR8i	670	1005	630	643	630	501	450	66	16	7.1	28
ACS880-07CLC-0750A-7	1xD8D + 1xR8i	750	1125	710	720	710	561	500	66	17	7.1	28
ACS880-07CLC-0850A-7	1xD8D + 1xR8i	850	1275	800	816	800	636	560	66	20	7.1	28
ACS880-07CLC-1030A-7	2xD8D + 2xR8i	1030	1545	1000	989	900	770	710	68	25	10.8	54
ACS880-07CLC-1170A-7	2xD8D + 2xR8i	1170	1755	1100	1123	1100	875	800	68	27	10.8	54
ACS880-07CLC-1310A-7	2xD8D + 2xR8i	1310	1965	1200	1258	1200	980	900	68	31	10.8	54
ACS880-07CLC-1470A-7	2xD8D + 2xR8i	1470	2205	1400	1411	1200	1100	1000	68	34	10.8	54
ACS880-07CLC-1660A-7	2xD8D + 2xR8i	1660	2490	1600	1594	1400	1242	1200	68	39	10.8	54
ACS880-07CLC-1940A-7	3xD8D + 3xR8i	1940	2910	1800	1862	1800	1451	1400	69	45	14.6	72
ACS880-07CLC-2180A-7	3xD8D + 3xR8i	2180	3270	2000	2093	2000	1631	1400	69	51	14.6	72
ACS880-07CLC-2470A-7	3xD8D + 3xR8i	2470	3705	2300	2371	2300	1848	1800	69	58	14.6	72
ACS880-07CLC-2880A-7	4xD8D + 4xR8i	2880	4320	2700	2765	2700	2154	2000	70	67	22.5	98
ACS880-07CLC-3260A-7	4xD8D + 4xR8i	3260	4890	3000	3130	3000	2438	2300	70	77	22.5	98
12-pulse diode												
ACS880-07CLC-0530A-7+A004	2xD8D + 1xR8i	530	795	500	509	450	396	355	66	13	7.6	38
ACS880-07CLC-0600A-7+A004	2xD8D + 1xR8i	600	900	560	576	560	449	400	66	14	7.6	38
ACS880-07CLC-0670A-7+A004	2xD8D + 1xR8i	670	1005	630	643	630	501	450	66	16	7.6	38
ACS880-07CLC-0750A-7+A004	2xD8D + 1xR8i	750	1125	710	720	710	561	500	66	17	7.6	38
ACS880-07CLC-0850A-7+A004	2xD8D + 1xR8i	850	1275	800	816	800	636	560	66	20	7.6	38
ACS880-07CLC-1030A-7+A004	2xD8D + 2xR8i	1030	1545	1000	989	900	770	710	68	25	10.8	54
ACS880-07CLC-1170A-7+A004	2xD8D + 2xR8i	1170	1755	1100	1123	1100	875	800	68	27	10.8	54
ACS880-07CLC-1310A-7+A004	2xD8D + 2xR8i	1310	1965	1200	1258	1200	980	900	68	31	10.8	54
ACS880-07CLC-1470A-7+A004	2xD8D + 2xR8i	1470	2205	1400	1411	1200	1100	1000	68	34	10.8	54
ACS880-07CLC-1660A-7+A004	2xD8D + 2xR8i	1660	2490	1600	1594	1400	1242	1200	68	39	10.8	54
ACS880-07CLC-1940A-7+A004	4xD8D + 3xR8i	1940	2910	1800	1862	1800	1451	1400	69	45	15.0	82
ACS880-07CLC-2180A-7+A004	4xD8D + 3xR8i	2180	3270	2000	2093	2000	1631	1400	69	51	15.0	82
ACS880-07CLC-2470A-7+A004	4xD8D + 3xR8i	2470	3705	2300	2371	2300	1848	1800	69	58	15.0	82
ACS880-07CLC-2880A-7+A004	4xD8D + 4xR8i	2880	4320	2700	2765	2700	2154	2000	70	67	22.5	98
ACS880-07CLC-3260A-7+A004	4xD8D + 4xR8i	3260	4890	3000	3130	3000	2438	2300	70	77	22.5	98
ACS880-07CLC-3580A-7+A004	6xD8D + 5xR8i	3580	5370	3400	3437	3200	2678	2600	72	84	25.8	126
ACS880-07CLC-4050A-7+A004	6xD8D + 5xR8i	4050	6075	3800	3888	3800	3029	2800	72	95	25.8	126
ACS880-07CLC-4840A-7+A004	6xD8D + 6xR8i	4840	7260	4400	4646	4400	3620	3500	72	114	29.1	142
ACS880-07CLC-5650A-7+A004	8xD8D + 7xR8i	5650	8475	5200	5424	5200	4226	4000	73	133	33.9	170
ACS880-07CLC-6460A-7+A004	8xD8D + 8xR8i	6460	9690	6000	6202	6000	4832	4700	73	152	37.2	186
24-pulse diode												
ACS880-07CLC-2470A-7+A006	4xD8D + 3xR8i	2470	3705	2300	2371	2300	1848	1800	69	58	15.0	82
ACS880-07CLC-3260A-7+A006	4xD8D + 4xR8i	3260	4890	3000	3130	3000	2438	2300	70	77	22.5	98
ACS880-07CLC-4840A-7+A006	8xD8D + 6xR8i	4840	7260	4400	4646	4400	3620	3500	72	114	30.0	154
ACS880-07CLC-5650A-7+A006	8xD8D + 7xR8i	5650	8475	5200	5424	5200	4226	4000	73	133	33.9	170
ACS880-07CLC-6460A-7+A006	8xD8D + 8xR8i	6460	9690	6000	6202	6000	4832	4700	73	152	37.2	186

Ratings, types and voltages

Liquid-cooled regenerative drives, ACS880-17LC

U_N = 690 V (range 525 to 690 V). The power ratings are valid at nominal voltage 690 V (250 to 6000 kW).

Drive type	Frame size	Nominal ratings			Light overload use		Heavy-duty use		Noise level (dB(A))	$P_{loss\ coolant}$ (kW)	Coolant volume (l)	Coolant flow rate (l/min)
		I_N (A)	I_{MAX} (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)				
ACS880-17LC-0390A-7	1xR8i + 1xR8i	390	590	355	374	355	292	250	68	15	12	68
ACS880-17LC-0430A-7	1xR8i + 1xR8i	430	650	400	413	355	322	250	68	17	12	68
ACS880-17LC-0480A-7	1xR8i + 1xR8i	480	720	450	461	400	359	315	68	19	12	68
ACS880-17LC-0520A-7	1xR8i + 1xR8i	520	780	500	499	450	389	355	68	21	12	68
ACS880-17LC-0600A-7	1xR8i + 1xR8i	600	900	560	576	500	449	400	68	24	12	68
ACS880-17LC-0670A-7	1xR8i + 1xR8i	670	1010	630	643	560	501	450	68	27	12	68
ACS880-17LC-0750A-7	1xR8i + 1xR8i	750	1130	710	720	630	561	500	68	31	12	68
ACS880-17LC-0830A-7	1xR8i + 1xR8i	830	1250	800	797	710	621	560	68	35	12	68
ACS880-17LC-1000A-7	2xR8i + 2xR8i	1000	1500	1000	960	900	748	710	70	38	19	120
ACS880-17LC-1170A-7	2xR8i + 2xR8i	1170	1760	1100	1123	1000	875	800	70	44	19	120
ACS880-17LC-1270A-7	2xR8i + 2xR8i	1270	1910	1200	1219	1200	950	900	70	50	19	120
ACS880-17LC-1470A-7	2xR8i + 2xR8i	1470	2210	1400	1411	1200	1100	1000	70	55	19	120
ACS880-17LC-1620A-7	2xR8i + 2xR8i	1620	2430	1600	1555	1400	1212	1200	70	63	19	120
ACS880-17LC-1940A-7	3xR8i + 3xR8i	1940	2910	1800	1862	1800	1451	1400	72	70	29	192
ACS880-17LC-2180A-7	3xR8i + 3xR8i	2180	3270	2000	2093	2000	1631	1600	72	81	29	192
ACS880-17LC-2390A-7	3xR8i + 3xR8i	2390	3590	2300	2294	2200	1788	1800	72	93	29	192
ACS880-17LC-2880A-7	4xR8i + 4xR8i	2880	4320	2700	2765	2600	2154	2000	73	105	38	224
ACS880-17LC-3160A-7	4xR8i + 4xR8i	3160	4740	3000	3034	2900	2364	2300	73	121	38	224
ACS880-17LC-3580A-7	5xR8i + 5xR8i	3580	5370	3400	3437	3200	2678	2500	74	132	48	296
ACS880-17LC-4050A-7	6xR8i + 5xR8i	4050	6080	3800	3888	3600	3029	2800	75	151	52	360
ACS880-17LC-4700A-7	6xR8i + 6xR8i	4700	7050	4400	4512	4400	3516	3400	75	182	58	376
ACS880-17LC-5650A-7	8xR8i + 7xR8i	5650	8480	5200	5424	5000	4226	4000	76	208	68	424
ACS880-17LC-6260A-7	8xR8i + 8xR8i	6260	9390	6000	6010	6000	4682	4500	76	286	75	504

Ratings, types and voltages

Liquid-cooled ultra-low harmonic drives, ACS880-37LC

U_N = 690 V (range 525 to 690 V). The power ratings are valid at nominal voltage 690 V (250 to 6000 kW).

Drive type	Frame size	Nominal ratings			Light overload use		Heavy-duty use		Noise level (dB(A))	$P_{loss\ coolant}$ (kW)	Coolant volume (l)	Coolant flow rate (l/min)
		I_N (A)	I_{MAX} (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)				
ACS880-37LC-0390A-7	1xR8i + 1xR8i	390	590	355	374	355	292	250	68	15	12	68
ACS880-37LC-0430A-7	1xR8i + 1xR8i	430	650	400	413	355	322	250	68	17	12	68
ACS880-37LC-0480A-7	1xR8i + 1xR8i	480	720	450	461	400	359	315	68	19	12	68
ACS880-37LC-0520A-7	1xR8i + 1xR8i	520	780	500	499	450	389	355	68	21	12	68
ACS880-37LC-0600A-7	1xR8i + 1xR8i	600	900	560	576	500	449	400	68	24	12	68
ACS880-37LC-0670A-7	1xR8i + 1xR8i	670	1010	630	643	560	501	450	68	27	12	68
ACS880-37LC-0750A-7	1xR8i + 1xR8i	750	1130	710	720	630	561	500	68	31	12	68
ACS880-37LC-0830A-7	1xR8i + 1xR8i	830	1250	800	797	710	621	560	68	35	12	68
ACS880-37LC-1000A-7	2xR8i + 2xR8i	1000	1500	1000	960	900	748	710	70	38	19	120
ACS880-37LC-1170A-7	2xR8i + 2xR8i	1170	1760	1100	1123	1000	875	800	70	44	19	120
ACS880-37LC-1270A-7	2xR8i + 2xR8i	1270	1910	1200	1219	1200	950	900	70	50	19	120
ACS880-37LC-1470A-7	2xR8i + 2xR8i	1470	2210	1400	1411	1200	1100	1000	70	55	19	120
ACS880-37LC-1620A-7	2xR8i + 2xR8i	1620	2430	1600	1555	1400	1212	1200	70	63	19	120
ACS880-37LC-1940A-7	3xR8i + 3xR8i	1940	2910	1800	1862	1800	1451	1400	72	70	29	192
ACS880-37LC-2180A-7	3xR8i + 3xR8i	2180	3270	2000	2093	2000	1631	1600	72	81	29	192
ACS880-37LC-2390A-7	3xR8i + 3xR8i	2390	3590	2300	2294	2200	1788	1800	72	93	29	192
ACS880-37LC-2880A-7	4xR8i + 4xR8i	2880	4320	2700	2765	2600	2154	2000	73	105	38	224
ACS880-37LC-3160A-7	4xR8i + 4xR8i	3160	4740	3000	3034	2900	2364	2300	73	121	38	224
ACS880-37LC-3580A-7	5xR8i + 5xR8i	3580	5370	3400	3437	3200	2678	2500	74	132	48	296
ACS880-37LC-4050A-7	6xR8i + 5xR8i	4050	6080	3800	3888	3600	3029	2800	75	151	52	360
ACS880-37LC-4700A-7	6xR8i + 6xR8i	4700	7050	4400	4512	4400	3516	3400	75	182	58	376
ACS880-37LC-5650A-7	8xR8i + 7xR8i	5650	8480	5200	5424	5000	4226	4000	76	208	68	424
ACS880-37LC-6260A-7	8xR8i + 8xR8i	6260	9390	6000	6010	6000	4682	4500	76	286	75	504

Nominal ratings	
I_N	Rated current available continuously without overloadability at 45 °C.
P_N	Typical motor power in no-overload use.
P_{max}	Maximum nominal cooling power.
Internal flow	Nominal coolant flow rate from the liquid cooling unit to the drive modules.
External flow	Nominal coolant flow rate to the liquid cooling unit from an external cooling circuit.
Maximum output current	
I_{max}	Maximum output current. Available for 10 seconds at start, then as long as allowed by drive temperature.
Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 45 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 45 °C.
P_{Hd}	Typical motor power in heavy-duty use.
Losses	
$P_{loss\ total}$	Power loss conducted to coolant and emitted to air.
$P_{loss\ coolant}$	Power loss conducted to coolant.
$P_{loss\ air}$	Power loss emitted to air (ambient room).
P_{drop}	Pressure loss in external cooling circuit.

The ratings apply at 45 °C ambient temperature. At higher temperatures (up to 55 °C) the derating is 1%/1 °C.
Operation above 150 Hz might require type-specific derating.

Ratings, types and voltages

Liquid-cooling unit, ACS880-1007LC

Range 380 to 690 V										
Liquid cooling unit type	**Nominal ratings**			**Noise level**	**Losses**				**Internal flow [1]**	**External flow [2]**
		Internal coolant volume	**External coolant volume**							
	P_{max} (kW)	**(l)**	**(l)**	**(dB(A))**	**$P_{loss\ total}$ (kW)**	**$P_{loss\ coolant}$ (kW)**	**$P_{loss\ air}$ (kW)**	**P_{drop} (kPa)**	**(l/min)**	**(l/min)**
ACS880-1007LC-0070 [3]	70	17	3	55	0.4	0.3	0.1	150	81/107	120
ACS880-1007LC-0195+C140 [3]/C141 [4]	195	31/35	8	55	1.3	1.0	0.3	150	270/355	467
ACS880-1007LC-0195+C213 [5]	195	35	8	57	2.1	1.8	0.3	150	310/415	467

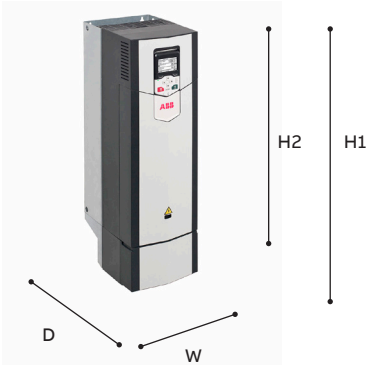
[1] 120 kPa, Antifrogen® L 25%, 40 °C, 50/60 Hz
[2] 36 °C water
[3] Single pump
[4] Redundant, one pump running
[5] Two pumps running

Dimensions
ACS880

ACS880-01, UL (NEMA) Type 1 / IP21

Frame size	Height (H1)		Height (H2)		Width (W)		Depth (D)		Weight	
	in	mm	in	mm	in	mm	in	mm	lb	kg
R1	16.0	405	14.6	370	6.1	155	8.9	226	13	6
R2	16.0	405	14.6	370	6.1	155	9.8	249	18	8
R3	18.5	471	16.5	420	6.7	172	10.3	261	22	10
R4	22.9	580	18.2	462	8.0	203	10.8	274	41	18.5
R5	28.8	732	23.5	596	8.0	203	10.8	274	51	23
R6	28.6	726.5	21.6	548	9.9	252	14.1	357	99	70
R7	34.6	880	23.6	600	11.2	284	14.4	365	121	55
R8	38.0	965	26.8	680	11.8	300	15.2	386	154	70
R9	37.6	955	26.7	680	15.0	380	16.2	412	216	98

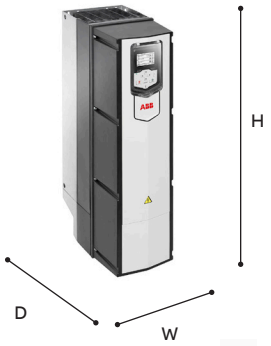
H1 = Height with cable entry box
H2 = Height without cable entry box
Width and depth with cable entry box



ACS880-01, UL (NEMA) Type 12 / IP55

Frame size	Height (H)		Width (W)		Depth (D)		Weight	
	in	mm	in	mm	in	mm	lb	kg
R1	17.6	450	6.3	162	11.5	295	13	6
R2	17.6	450	6.3	162	12.3	315	18	8
R3	20.5	525	7.0	180	12.8	327	22	10
R4	28.9	735	9.3	236	13.5	344	41	18.5
R5	34.9	886	9.3	236	13.5	344	51	23
R6	34.8	884	11.5	291	16.4	417	99	45
R7	40.9	1038	12.8	324	16.5	418	121	55
R8	44.2	1123	13.8	350	17.8	452	159	72
R9	46.8	1188	17.0	431	18.8	477	220	100

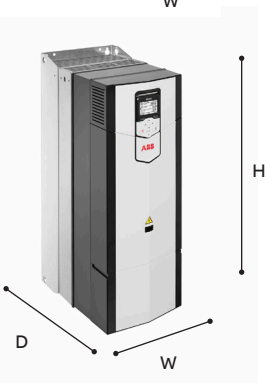
Width and depth with cable entry box



ACS880-11/-31, UL (NEMA) Type 1 / IP21

Frame size	Height		Width		Depth		Weight	
	in	mm	in	mm	in	mm	lb	kg
R3	19.5	495	8.1	205	14	356	47	21.3
R6	30.4	771	9.9	252	15	382	135	61
R8	38	965	11.8	300	16.9	430	260 [1]	118 [1]

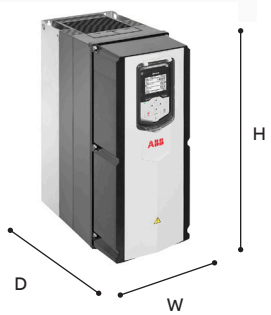
1. ACS880-11/31 -101-5 and -124-5 weigh 227 lbs and 103 kg respectively



ACS880-11/-31, UL Type 12 / IP55

Frame size	Height		Width		Depth		Weight	
	in	mm	in	mm	in	mm	lb	kg
R3	19.5	495	8.0	205	14.2	360	51	23.3
R6	30.4	771	9.9	252	17.5	445	139	63
R8	38.0	965	11.8	300	19.5	496	273 [2]	124 [2]

2. ACS880-11/31 -101-5 and -124-5 weigh 240 lbs and 109 kg respectively



ACS880-07 UL (NEMA) Type 1 / IP22 & IP42

Frame size	Height (H)		Width (W)		Depth (D)		Weight	
	in	mm	in	mm	in	mm	lb	kg
R6	84.5	2145	16.9	430	26.5	673	528	240
R7	84.5	2145	16.9	430	26.5	673	550	250
R8	84.5	2145	16.9	430	26.5	673	583	265
R9	84.5	2145	32.7	830	27.5	698	825	375
R10	84.5	2145	32.7	830	27.5	698	1170	530
R11	84.5	2145	32.7	830	27.5	698	1280	580

ACS880-07 UL (NEMA) Type 12 / IP54

Frame size	Height (H)		Width (W)		Depth (D)		Weight	
	in	mm	in	mm	in	mm	lb	kg
R6	91.2	2315	16.9	430	26.5	673	528	240
R7	91.2	2315	16.9	430	26.5	673	550	250
R8	91.2	2315	16.9	430	26.5	673	583	265
R9	91.2	2315	32.7	830	27.5	698	825	375
R10	91.2	2315	32.7	830	27.5	698	1170	530
R11	91.2	2315	32.7	830	27.5	698	1280	580

ACS880-07 UL (NEMA) Type 1 & 12 / IP22,IP42 & IP54

Frame size	Height (H)		Width (W)		Depth (D)		Weight	
	in	mm	in	mm	in	mm	lb	kg
D8T+R8i	84.5	2145	72.047	1830	27.5	698	3234	1470
2xD7T+R8i1	84.5	2145	79.921	2030	27.5	698	3762	1710
2xD8T+2xR8i	84.5	2145	79.921	2030	27.5	698	3630	1650
2xD8T+2xR8i	84.5	2145	87.795	2230	27.5	698	4114	1870
2xD8T+3xR8i	84.5	2145	95.669	2430	27.5	698	4444	2020
3xD8T+3xR8i	84.5	2145	103.543	2630	27.5	698	4906	2230
3xD8T+4xR8i	84.5	2145	119.291	3030	27.5	698	5698	2590
4xD8T+3xR8i	84.5	2145	119.291	3030	27.5	698	5720	2600
4xD8T+4xR8i	84.5	2145	135.039	3430	27.5	698	6512	2960
4xD8T+5xR8i	84.5	2145	142.913	3630	27.5	698	6842	3110

1) only 12 pulse

ACS880-17/-37 UL (NEMA) Type 1 / IP22 & IP42

Frame size	Height		Width		Depth		Weight	
	in	mm	in	mm	in	mm	lb	kg
R8	84.5	2145	16.9	430	27	685	705	320
R11	84.5	2145	48.5	1230	28	710	1655	750
R8i+R8i	84.5	2145	48.5	1230	35.4	898	2600	1180
2xR8i+2xR8i	84.5	2145	95.7	2430	27.5	698	4605	2090
3xR8i+3xR8i	84.5	2145	127	3230	28.1	714	6455	2930
4xR8i+4xR8i	84.5	2145	150.787	3830	28.1	714	8151	3700
6xR8i+5xR8i	84.5	2145	198.031	5030	28.1	714	10640	4830
6xR8i+6xR8i	84.5	2145	209.843	5330	28.1	714	10971	4980

NOTE: These dimensions are for the default type codes. Any "plus" codes may alter one or more of these dimensions.

* Dimensions are for standard configuration including measures for door installed components.
Plus code options can affect dimensions. For more information, please see dimensional drawings in hardware manual.

ACS880-07LC, UL (NEMA) Type 1 & 12 / IP42 & IP54

Frame size	Height	Width		Depth	Weight	
	(mm)	6-pulse (mm)	12-pulse (mm)	(mm)	6-pulse (kg)	12-pulse (kg)
1xD8T + 1xR8i	2002	1700	–	644	1480	–
1xD8T + 2xR8i	2002	1900	–	644	1610	–
2xD8T + 1xR8i	2002	–	2300	644	–	2230
2xD8T + 2xR8i	2002	1900	2500	644	1760	2360
2xD8T + 3xR8i	2002	2100	2700	644	1930	2530
3xD8T + 3xR8i	2002	2500	–	644	2230	–
3xD8T + 4xR8i	2002	2800	–	644	2490	–
4xD8T + 3xR8i	2002	–	3240	644	–	2980
4xD8T + 4xR8i	2002	–	3400	644	–	3240
4xD8T + 5xR8i	2002	3600	3600	644	3410	3410
5xD8T + 6xR8i	2002	4500	–	644	3410	–
6xD8T + 6xR8i	2002	–	4200	644	–	4030
6xD8T + 7xR8i	2002	4800	4800	644	4470	4470
6xD8T + 8xR8i	2002	5000	5000	644	4640	4640

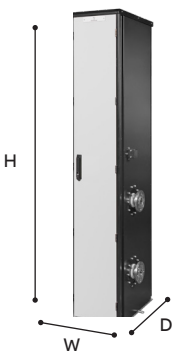
ACS880-07CLC, UL (NEMA) Type 1 / IP42 & IP54

Frame size	Height	Width	Depth	Weight
	(mm)	(mm)	(mm)	(kg)
1xD8D+1xR8i	2002	700	636	580
2xD8D+1xR8i	2002	700	636	580
2xD8D+2xR8i	2002	900	636	710
3xD8D+3xR8i	2002	1200	636	1030
4xD8D+3xR8i	2002	1200	636	1030
4xD8D+4xR8i	2002	1500	636	1290
6xD8D+5xR8i	2002	2200	636	1890
6xD8D+6xR8i	2002	2400	636	2060
8xD8D+7xR8i	2002	2700	636	2290
8xD8D+12xR8i	2002	2900	636	2520

ACS880-1007LC, liquid-cooling unit

Unit type	Height	Width [1)]	Depth	Weight
	(mm)	(mm)	(mm)	(kg)
ACS880-1007LC-0070	2002	300/330	636	200
ACS880-1007LC-0195+C140	2002	600/630	636	310
ACS880-1007LC-0195+C141	2002	600/630	636	366
ACS880-1007LC-0195+C213	2002	600/630	636	373

1) The first values are for line-up connected unit and the latter values for standalone unit.



ACS880-17/37LC, UL (NEMA) Type / IP42 & IP54

Frame size	Height	Width	Depth	Weight
	(mm)	(mm)	(mm)	(kg)
1xR8i+1xR8i	2002	2000	644	2040
2xR8i+2xR8i	2002	2400/2500 [1)]	644	5070/5400 [2)]
3xR8i+3xR8i	2002	3200	644	7250
4xR8i+4xR8i	2002	4000	644	9060
5xR8i+5xR8i	2002	4600	644	10470
6xR8i+5xR8i	2002	5800	644	13600
6xR8i+6xR8i	2002	6000	644	13980
8xR8i+7xR8i	2002	7300	644	17020
8xR8i+12xR8i	2002	7600	644	17590

1) 2400 mm for -1000A-7, - 1170A-7 and -1270A-7. 2500 mm for -1470A-7 and -1620A-7.
2) 5070 kg for -1000A-7, - 1170A-7 and -1270A-7. 5400 kg for -1470A-7 and -1620A-7.

Standard interface and extensions for plug-in connectivity

—
01
Control unit ZCU-12
—
02
Example of a typical single drives input/output connection diagram.
Variations may be possible. For further information, please see the ACS880 user manual.

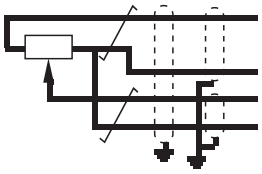
ACS880 drives offer a wide range of standard interfaces including extensive selection of I/O connections, Safe Torque Off (STO) and a galvanically isolated RS485 link that can be configured as either Modbus RTU or high-speed drive-to-drive link.

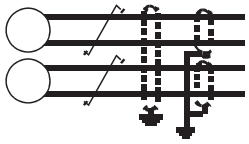
In addition, they offer three option slots that can be used for communication protocol adapters, input/output extension modules, feedback modules, and a safety functions module. For I/O extensions, see page 63.

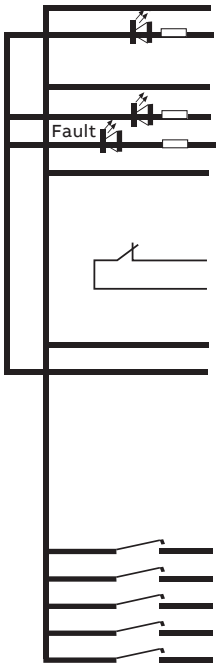
01

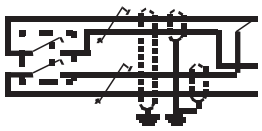
Control connections	Description
2 analog inputs (XAI)	Current input: -20 to 20 mA, R_{in}: 100 ohm Voltage input: -10 to 10 V, R_{in} > 200 kohm Resolution: 11 bit + sign bit
2 analog outputs (XAO)	0 to 20 mA, R_{load} < 500 ohm Frequency range: 0 to 300 Hz Resolution: 11 bit + sign bit
6 digital inputs (XDI)	Input type: NPN/PNP (DI1 to DI5), NPN (DI6) DI6 (XDI:6) can alternatively be used as an input for a PTC thermistor.
Digital input interlock (DIIL)	Input type: NPN/PNP
2 digital inputs/outputs (XDIO)	As input: 24 V logic levels: “0” < 5 V, “1” > 15 V R_{in}: 2.0 kohm Filtering: 0.25 ms As output: Total output current from 24 V DC is limited to 200 mA Can be set as pulse train input and output
3 relay outputs (XRO1, XRO2, XRO3)	250 V AC/30 V DC, 2 A
Safe torque off (XSTO)	For the drive to start, both connections must be closed
Drive-to-drive link (XD2D)	Physical layer: EIA-485
Built-in Modbus	EIA-485
Assistant control panel/PC tool connection	Connector: RJ-45

02









XPOW		**External power input**
1	+24VI	24 V DC, 2 A
2	GND	
XAI		**Reference voltage and analog inputs**
1	+VREF	10 V DC, R_L 1 to 10 kohm
2	-VREF	-10 V DC, R_L 1 to 10 kohm
3	AGND	Ground
4	AI1+	Speed reference 0(2) to 10 V, R_{in} > 200 kohm
5	AI1-	
6	AI2+	By default not in use. 0(4) to 20 mA, R_{in} > 100 ohm
7	AI2-	
J1	J1	AI1 current/voltage selection jumper
J2	J2	AI2 current/voltage selection jumper
XAO		**Analog outputs**
1	AO1	Motor speed rpm 0 to 20 mA, R_L < 500 ohm
2	AGND	
3	AO2	Motor current 0 to 20 mA, R_L < 500 ohm
4	AGND	
XD2D		**Drive-to-drive link**
1	B	Drive-to-drive link or built-in Modbus
2	A	
3	BGND	
J3	J3	Drive-to-drive link termination switch
XRO1, XRO2, XRO3		**Relay outputs**
11	NC	Ready 250 V AC/30 V DC 2 A
12	COM	
13	NO	
21	NC	Running 250 V AC/30 V DC 2 A
22	COM	
23	NO	
31	NC	Faulted (-1) 250 V AC/30 V DC 2 A
32	COM	
33	NO	
XD24		**Digital interlock**
1	DIIL	Digital interlock
2	+24VD	+24 V DC 200 mA
3	DICOM	Digital input ground
4	+24VD	+24 V DC 200 mA
5	DIOGND	Digital input/output ground
J6		Ground selection switch
XDIO		**Digital input/outputs**
1	DIO1	Output: Ready
2	DIO2	Output: Running
XDI		Digital inputs
1	DI1	Stop (0)/Start (1)
2	DI2	Forward (0)/Reverse (1)
3	DI3	Reset
4	DI4	Acceleration and deceleration select
5	DI5	Constant speed 1 (1=On)
6	DI6	Not in use by default
XSTO		**Safe torque off**
1	OUT1	Safe torque off. Both circuits must be closed for the drive to start.
2	SGND	
3	IN1	
4	IN2	
X12		**Safety functions module connection**
X13		**Control panel connection**
X205		**Memory unit connection**

K

Control panel options







01 02 03 04 05 06 07

01
Bluetooth assistant control panel, ACS-AP-W

02
Industrial assistant control panel without Bluetooth, ACS-AP-I

03
Control panel mounting platform DPMP-01

04
Control panel mounting platform DPMP-02

05
Control panel mounting platform, DPMP-04

06
Control panel mounting platform, DPMP-06

07
Control panel mounting platform, DPMP-08

Standard Bluetooth assistant control panel, ACS-AP-W and Industrial assistant control panel, ACS-AP-I
Assistant control panel with multilingual graphical display can be used to set and back-up parameters, for drive monitoring and operation, fault tracing and as a USB link for a PC tool. There are two different assistant control panels – with (ACS-AP-W) or without (ACS-AP-I) Bluetooth communication. The panels can be mounted either on the drive or on the door of the enclosure and are compatible with any ABB all-compatible drive.

The control panel helps you get the drive setup and running quickly. Also diagnostics is easy due to event history, clear text messages and real-time stamps.

The Bluetooth connection enables the use of Drivebase and Drivetune. These apps are available for free on the Google Play and the Apple App store. Drivetune features include: commissioning, troubleshooting, monitoring and controlling the drive remotely. Drivetune also has full parameter access and backup and restore functionality. Drivebase lets you access product and service information, View drives installed base, plan service activities and report service events.

Control panel mounting platform, DPMP-01, is used to flush mount the control panel and has UL (NEMA) Type 12 / IP54 protection class (UL (NEMA) Type Open / IP20, when control panel is not mounted). The control panel also supports daisy chaining the control panel link.

Control panel mounting platform, DPMP-02, is for surface mounting the control panel and has UL (NEMA) Type 12 / IP65 protection class (UL (NEMA) TYPE Open / IP20, when control panel not mounted).

Control panel mounting platform, DPMP-04, is a lockable door mounting platform for drive control panel in outdoor installations or harsh environments. It has a UL (NEMA) Type 4X / IP66 protection class, UV resistance and IK07 impact protection rating.

Control panel mounting platform, DPMP-06, is for flush mounting the control panel and has UL (NEMA) Type 12 protection class. Includes 3m RJ45 cable.

Control panel mounting platform, DPMP-08, is a flush mount UL Type 4X/IP69 indoor washdown duty protection class. NSF169 rated. (Bluetooth control panel highly recommended).

Control panel options
Bluetooth Assistant control panel ACS-AP-W is included as standard in the delivery.
ACS-AP-W (+J400) can be replaced by +J options below.

Option code	Ordering code for loose item	Description	Type
+0J400	–	No control panel	–
–	3AXD0000025965	Bluetooth Assistant control panel. Included as standard.	ACS-AP-W
+J425	3AUA0000088311	Industrial assistant control panel without Bluetooth connection	ACS-AP-I
+J410	3AUA0000108878	Control panel mounting platform, flush mounted, UL (NEMA) Type 12 / IP54 (does not include control panel)	DPMP-01
+J413	3AXD50000009374	Control panel mounting platform, surface mounted, UL (NEMA) Type 12 / IP65 (does not include control panel)	DPMP-02
–	3AXD50000217717	Control panel mounting platform for outdoor and harsh environments, IP66, UV resistance, IK07 impact protection rating (does not include control panel)	DPMP-04
–	3AXD50000371075	Control panel door mounting kit (flush mounting) Type 12 (does not include the control panel, includes 3m cable)	DPMP-06
–	3AXD50000853908	Control panel door mounting kit (flush mounting) Type 4X / IP69 indoor washdown duty (does not include the control panel, includes 3m cable)	DPMP-08

Door mounting and panel bus

Improve safety and leverage the full potential of the ACS880 control panel options with a door mounting kit and panel bus adapter.

Door mounting the ABB control panel promotes easy operation and safety. It enables you to operate the drive without opening the cabinet door, saving time and reduces liability by keeping all the electronics behind the closed door.

Up to 32 drives can be connected to one control panel for even easier and quicker operation. When using panel bus, you need only one assistant control panel.

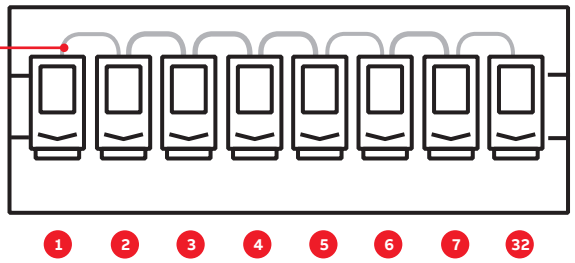
Cabinet door

Control panel mounting platform
The mounting platform for the drive's control panel.

Bluetooth Assistant control panel
The Bluetooth Assistant control panel comes standard with ACS880 drives, however any Industrial Assistant control panel can be used.

Cabinet, outside

Panel bus
Panel bus connectors come standard in wall-mounted ACS880-01, -11 and -31 drives. With other ACS880 drives, panel bus can be implemented by using an FDPI-02 interface.



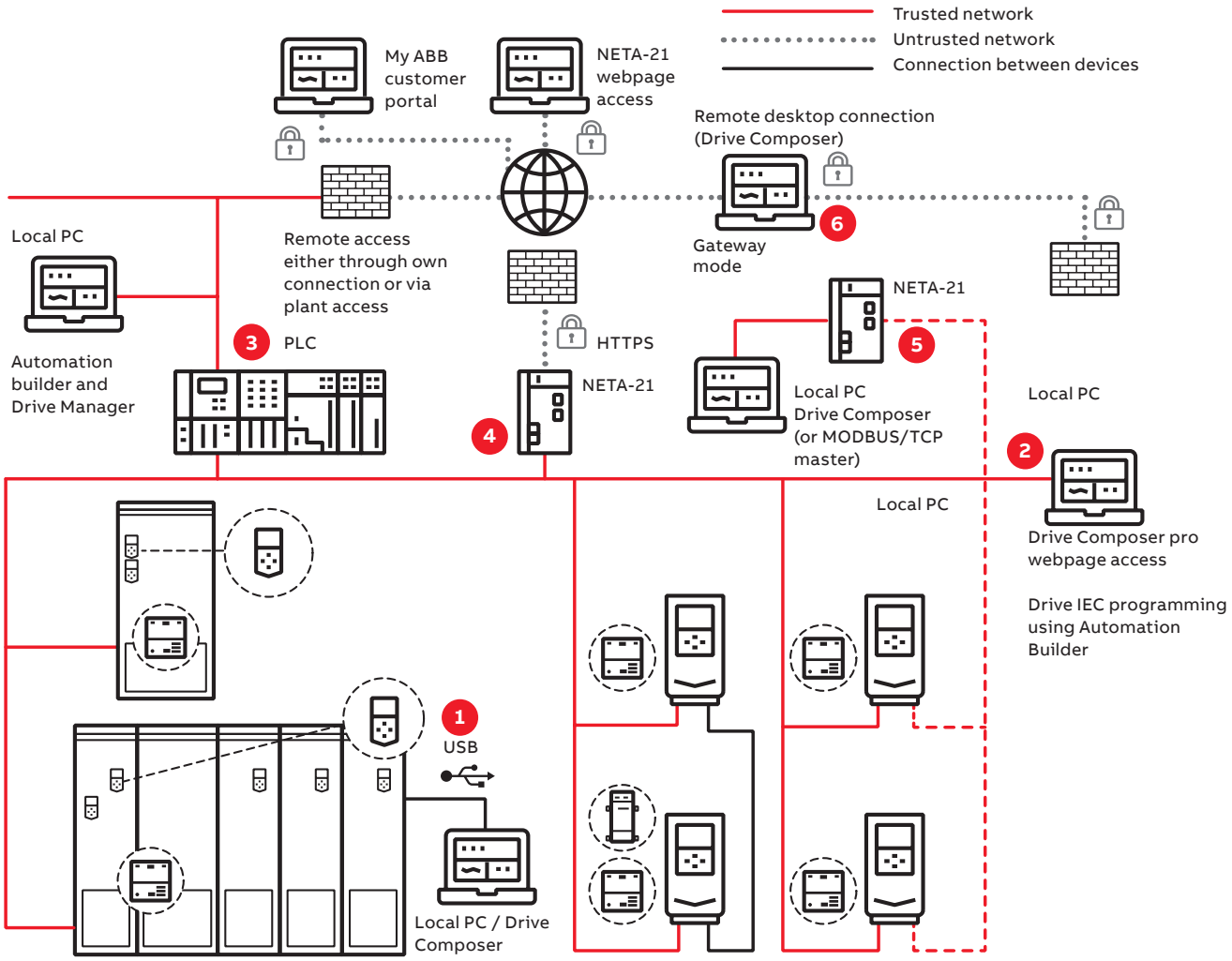
Cabinet, inside

Communication and connectivity
Fast and reliable communication

The F-series fieldbus adapter modules are flexible, plug-in adapters that provide fast and simple universal connectivity to all major controllers. Universal connectivity means ABB low voltage drives connect to automation controllers and communication networks, allowing users to choose the best network to meet their needs.

- Reduces mechanical and electrical cost
- Decrease in downtime
- Increase in productivity
- Diminished start-up costs
- Lower maintenance and diagnostic costs
- Quick access to networked drives with PC-based start-up and maintenance software tools
- Reductions in wiring costs compared to traditional I/O connections

Industrial automation plant – different network possibilities and their secure deployment



1. Local connections (point-to-point serial communication, e.g. USB) or
2. Shared (with control) upper-level physical fieldbus network (e.g., PROFINET) using Ethernet tool communication and/or
3. Communicating also through PLC system using Drive Manager device tool or
4. NETA-21 remote monitoring tool web interface or
5. NETA-21 acting as a gateway between or
6. Third-party remote desktop connection.

Connectivity to automation systems

—
01
ACS880 is compatible with many communication protocols
—
02
Input/output extension modules

Communication protocol adapters
ACS880 industrial drives are compatible with a wide range of communication protocols. The drive comes with a Modbus RTU fieldbus interface as standard.

The ACS880 supports two different communication connections simultaneously and offers redundant communication. PROFIsafe (functional safety over PROFINET) is also supported.

—
Communication protocol adapters

Option code	Ordering code for loose item	Communication protocol	F-Series Adapter
+K451	68469341	DeviceNet™	FDNA-01
+K454	68469325	PROFIBUS DP. DPV0/DPV1	FPBA-01
+K457	68469376	CANopen®	FCAN-01
+K458	3AUA0000031336	Modbus RTU	FSCA-01
+K462	3AUA0000094512	ControlNet	FCNA-01
+K469	3AUA0000072069	EtherCAT®	FECA-01
+K470	3AXD5000019239	POWERLINK	FEPL-02
+K491	3AXD50000049964	Modbus/TCP	FMBT-21
+K492	3AXD50000192779	PROFINET IO	FPNO-21 [1]
+K490	3AXD50000192786	EtherNet/IP	FEIP-21
+Q986	3AXD50000112821	PROFIsafe safety functions module	FSPS-21

[1] For the PROFIsafe to work the PROFINET adapter module (FPNO-21) and the safety functions module FSO-12 (+Q973) or FSO-21 (+Q972) are required. The FPNO-21 adapter module enables PROFINET system redundancy S2 allowing the drive to establish connection with two control PLCs in a redundant manner.

—
01

—
02

Input/output extension modules
Standard input and output can be extended by using optional analog and digital input/output extension modules. The modules are easily installed in the option slots on the drive.

If there are not enough I/O option slots in the drive, the FEA-03 module can increase the number of slots. The FEA-03 has two option slots for digital I/O extensions and speed feedback interface modules. The connection to the control unit is via an optical fiber link, and the adapter can be mounted on a DIN rail (35 × 7.5 mm).

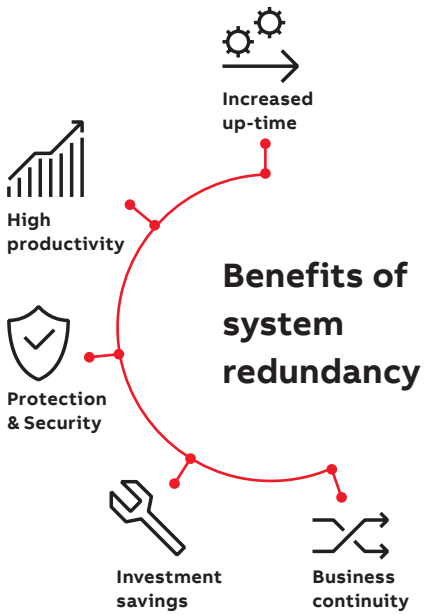
—
Analog and digital input/output extension modules

Option code	Ordering code for loose item	Description	I/O module
+L501	68805368	4×DI/O, 2×RO	FIO-01
+L500	68805384	3×AI (mA/V), 1×AO (mA), 2×DI/O	FIO-11
+L515	3AUA0000108669	2×F-type option extension slots	FEA-03
+L525	3AUA0000141436	2×AI (mA/V), 2×AO (mA)	FAIO-01
+L526	3AUA0000141438	3×DI (up to 250 V DC or 230 V AC), 2×RO	FDIO-01

PROFINET S2 system redundancy for ABB drives

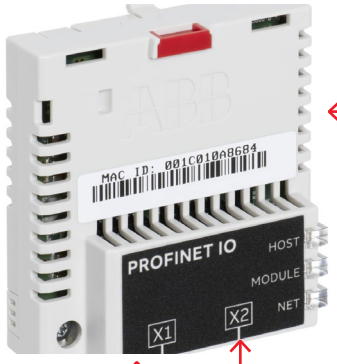
System redundancy is a high-priority requirement in process industry and infrastructure installations where the system must be operational even during component breakdowns and malfunctioning. The interruption of a continuous production process could potentially lead to large financial losses or safety hazards. Thanks to the new PROFINET S2 system redundancy of ABB drives, the unwanted downtime can be minimized. This leads to better process control with improved productivity.

PROFINET system redundancy S2 is now available for ABB drives with the optional PROFINET interface module FPNO-21. It allows the drive to establish connection with two control PLCs in a redundant manner.



PROFINET IO
2 ports interface module.
Certified according to
Conformance Class B (CC-B)

SNTP Time synchronization



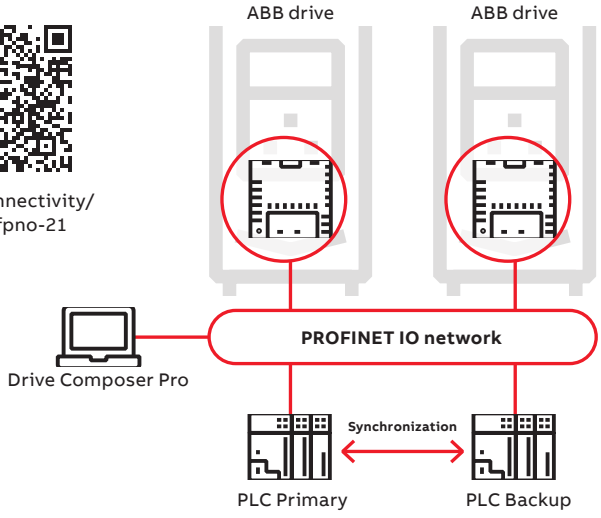
Ethernet tool network
PROFINET IO at the same time with Drive Composer pro

PROFINET Shared Device
PROFIsafe support with FSO-12/-21 safety functions module

For all-compatible drives portfolio

PROFINET S2 system redundancy

https://new.abb.com/drives/connectivity/fieldbus-connectivity/profinet/fpno-21



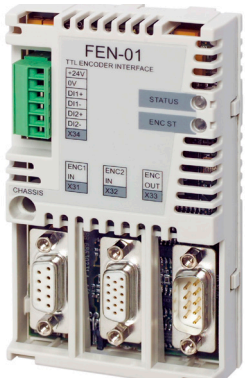
Feedback interface and DDCS communication options

—
01
FEN-01 TTL encoder interface module
—
02
FDCO-01 DDCS communication module

Speed feedback interfaces for precise process control

ACS880 drives can be connected to HTL pulse encoders, TTL pulse encoders, absolute encoders and resolvers. The optional feedback module is installed in the option slot on the drive.
It is possible to use two feedback modules at the same time, either of the same type or different types *.

* Excluding FSE-31.



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01

—
Feedback interface modules

Option code	Ordering code for loose item	Description	Feedback module
+L517	68805422	2 inputs (TTL pulse encoder), 1 output	FEN-01
+L518	68805830	2 inputs (SinCos absolute, TTL pulse encoder), 1 output	FEN-11
+L516	68805848	2 inputs (Resolver, TTL pulse encoder), 1 output	FEN-21
+L502	68978955	1 input (HTL pulse encoder), 1 output	FEN-31
+L521	3AXD50000023272	Pulse encoder interface for functional safety (for more details see section “Safety options”)	FSE-31

DDCS communication option modules

The FDCO-0X optical DDCS communication options are add-on modules on the ACS880 industrial drives control unit. The modules include connectors for two fiber optic DDCS channels. The FDCO-0X modules make it possible to perform master-follower and AC800 M communication. Alternatively the standard RS485 communication port can be used.

—
02

—
Optical communication modules

Option code	Ordering code for loose item	Description	Module
+L503	3AUA0000107392	Optical DDCS (10 Mbd/10 Mbd)	FDCO-01
+L508	3AUA0000107393	Optical DDCS (5 Mbd/10 Mbd)	FDCO-02

ABB Ability™ Digital Powertrain
Condition monitoring for drives

Accurate, real-time information about powertrain events. When you have the facts, you can make the right decisions.

ABB Ability™ Digital Powertrain
The ABB Ability™ Digital Powertrain enables you to remotely monitor the health and performance of entire powertrains including drives, motors and applications, such as pumps. The data collected from the connected equipment can be accessed and analyzed remotely, providing a better understanding of the health and energy efficiency of the entire process.

ABB Ability™ Condition Monitoring for drives
ABB Ability™ Condition Monitoring for drives is a key element of the Digital Powertrain. The services are designed to provide key information about drive events and changes in behavior to ensure your equipment is always available, reliable and well maintained.

The service can be tailored to fit your needs. Our standard package for condition monitoring for drives gives you industry leading monitoring capabilities – whether you want to view the drive status through ABB's Internet portal or integrate this data with your existing monitoring systems.

The standard package includes the following services:
- Condition Monitoring
- Alarm Management
- Asset Health
- Team Support
- Backup Management

The standard package can be supplemented with optional services:
- Offline Data Collection
- Expert Reports
- Remote Assistance
- Condition monitoring of your entire powertrain

Solid fact-based decision making
Get the facts, and the history, to help run your operations better and more safely.

Always stay one step ahead of problems
Recognize early signs of possible failures and assess the risks, before they turn into serious operational issues.

Find the root cause of process issues
Remotely access data from ABB drives built-in sensors to track the cause of problems. Get back to smooth operation quickly with data back-ups.

Remotely analyze and optimize drives
Get critical drive information anywhere anytime – even in difficult to access sites, or when a site visit is impossible.

NETA-21

NETA-21 connects the drive to the cloud via the Internet or local Ethernet network.

The remote data helps you base your decisions on solid facts and run your operations better and safer.

Remote monitoring helps you to recognize early signs of potential failures allowing you to act before a problem occurs. You can also remotely access the data from ABB drives to analyze and find the root cause of a problem.

With remote access you can analyze and optimize drive information anywhere, even in sites that are difficult to access, or when a site visit is not possible.

- The module comes with a built-in web server and requires no Flash/Java plugins
- In the absence of a customer local area network, it can be connected via a mobile network router (either Ethernet or USB network adapter)
- One module can be connected to several drives at the same time

NETA-21 *	Ordering code	Description
	3AUA0000094517	2 x panel bus interface
		max. 9 drives
		2 x Ethernet interface
		SD memory card
	+K496	Connectivity for wired remote monitoring with NETA-21
	+K497	Connectivity for wireless remote monitoring with 4G modem and NETA-21

* Following options available for ACS880-07, -17 and -37

Customers can configure powertrains and customize the digital service plan

1 **Choose one or more assets you want to protect**

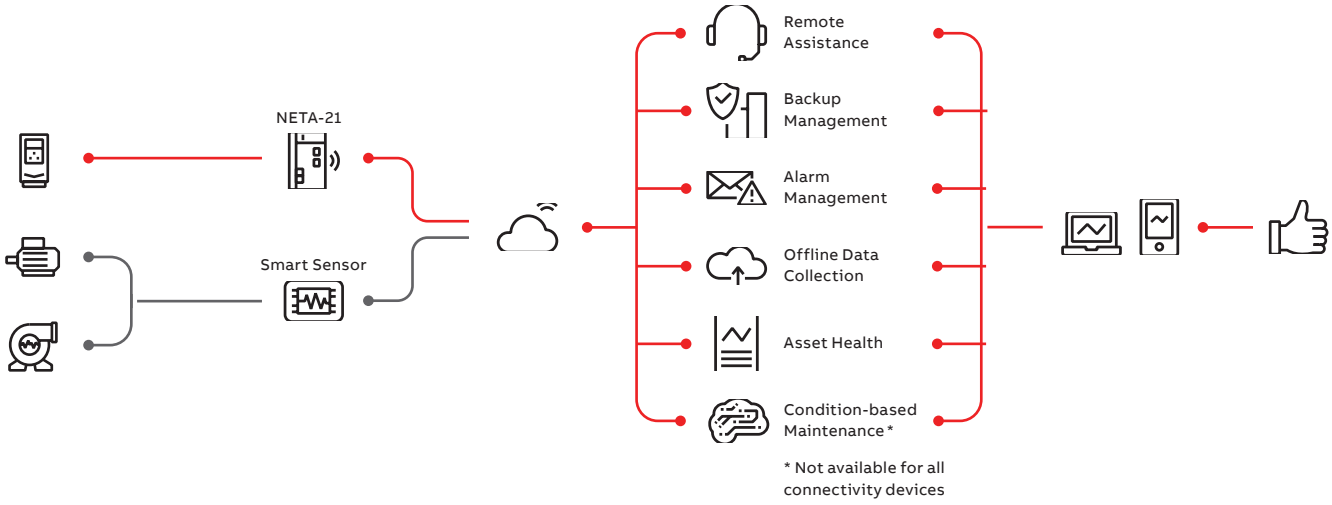
2 **Install the connectivity device**

3 **Activate access to the Condition Monitoring basic feature**

4 **Pick optional features and customize**

5 **Start monitoring**

6 **Enjoy the customized service**

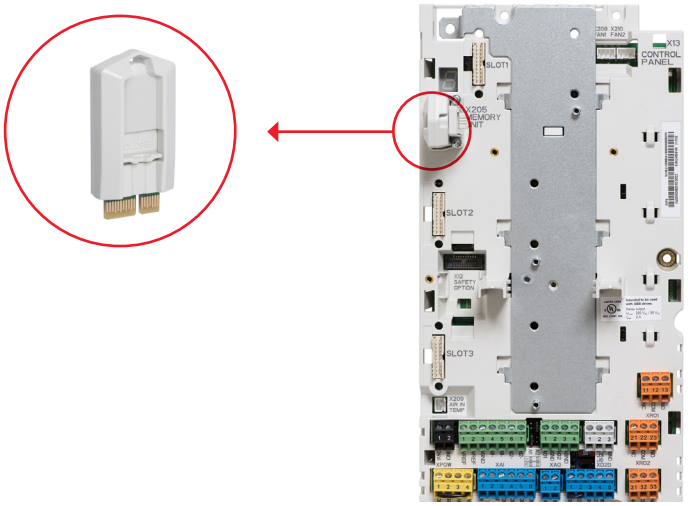


* Not available for all connectivity devices

Commissioning, programming and customization tools

Your engineering efficiency is boosted with our commissioning and programming tools, giving you the optimal solution to perform virtualization, planning, commissioning and maintenance.

Removable memory unit
The memory unit stores the drive software and settings, including motor data. This unit can be switched from one drive to another, allowing simple and rapid drive replacement without any special equipment, software loading, parameter settings, or other adjustments in the drive or automation system. It also eliminates the risk of software incompatibility. The new drive is ready to run as soon as the memory unit is plugged in.



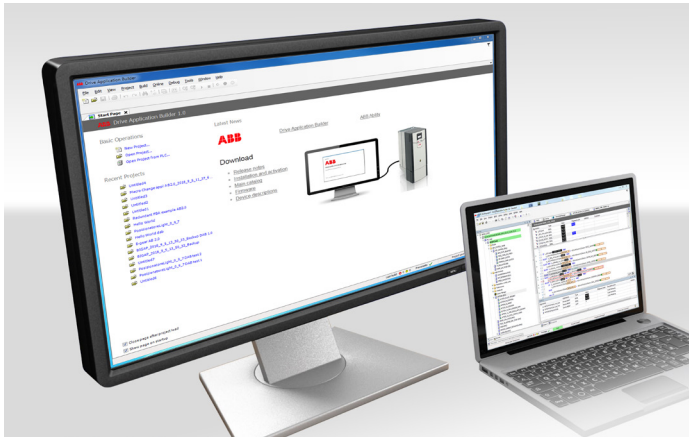
Drive Composer
The Drive Composer PC tool offers fast and harmonized setup, commissioning and monitoring for all-compatible drives. Drive Composer Entry is a free version of the tool that provides startup and maintenance capabilities and can gather parameter loggers, faults, backups and lists, into a support diagnostics file. Drive Composer pro provides additional features including custom parameter windows, graphical control diagrams of the drive's configuration, and improved monitoring and diagnostics.

Drive Composer	Entry level (free)	Pro level
	Basic functionality	Entry-level features
	Parameter setting	Networked drives
	Point-to-point connection	Control diagrams
	Simple monitoring	Data logger(s)
	Supports adaptive programming	Graphical safety setup
	Adaptive programming in Demo mode	Adaptive (block) programming
	–	Multiple backup and restore
	–	Drive configuration by using virtual drive

Link/MRP codes	Description	Type designation
new.abb.com/drives/software-tools/drive-composer	Link to download free Drive Composer entry	–
9AKK105408A3415	Drive Composer entry PC tool (document)	–
3AUA0000108087	Drive Composer pro PC tool (single user license)	DCPT-01
3AUA0000145150	Drive Composer pro PC tool (10 users license)	DCPT-01
3AUA0000145151	Drive Composer pro PC tool (20 users license)	DCPT-01

Drive Application Builder

Drive Application Builder can be used for creating customized solutions. It is a drive application programming tool based on IEC 61131 standard and enables PLC programmability in the ACS880.



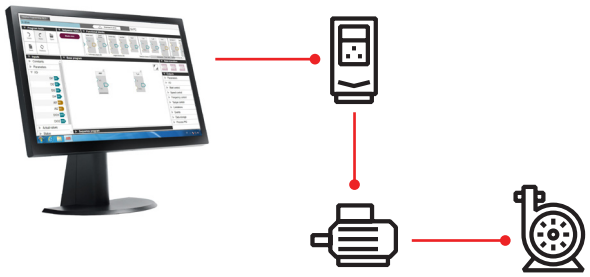
Ordering code	Description	PC tool
3AXD50000342389	Standard version of the Drive Application Builder for IEC 61131-3 programming, DABS-STANDARD	Licenses for Drive Application Builder [1]
3AXD50000342402	Premium version of the Drive Application Builder for IEC 61131-3 programming, DABP-PREMIUM	
3AXD50000343027	Software development productivity add-ons for Drive Application Builder, version control and static analysis extensions for improve software engineering productivity, single workstation, DABX-PRODUCTIVITY-ADD-ONS	
+N8010	License key for drive application programming based on IEC 61131-3 using Drive Application Builder	IEC programming

[1] For IEC programming, a license key is needed for the ACS880 drive (+N8010)

Adaptive programming

Adaptive programming software, embedded inside the drive, is especially handy when there is a need to distribute some of the machine's control logic to the drive. Adaptive programming brings energy savings when the drive is adjusted to control the application optimally.
You can use our Drive Composer PC tool to set up the adaptive programming. Adaptive programming makes it possible to enhance the existing application control program to precisely fit users' application needs. The program is easy to understand and uses simple buidling blocks with interconnections for programming.

Adaptive programming



Safety options

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ACS880 drive with FSO-21, FSE-31 and FENA-21

Integrated safety
Integrated safety reduces the need for external safety components, simplifying configuration and reducing installation space. The safety functionality is a built-in feature of the ACS880, with safe torque off (STO) as standard. The STO function corresponds to an uncontrolled stop in accordance with stop category 0 of EN 60204-1. Additional safety functions can be commissioned with the optional and compact safety functions module. ACS880 drives offer functional safety with or without encoder. The drive's functional safety is designed in accordance with EN/IEC 61800-5-2 and complies with the requirements of the European Union Machinery Directive (2006/42/EC).

The safety functions are certified by TÜV Nord and comply with the highest performance requirements (SIL 3/PLe) in machinery safety. [1)]

The safety functions module can also be ordered separately and installed on the drive.

PROFIsafe safety functions module, FSPS-21, with integrated PROFIsafe, and PROFINET IO connection supports STO and SS1-t safety functions. Since the functions are automatically configured, no additional safety settings are required in the drive.

Safety functions modules, FSO-12 and FSO-21, support a wide range of safety functions. Configure the modules with Drive Composer pro PC tool, which provides an easy-to-use graphical user interface. Larger safety systems can be built using PROFIsafe over PROFINET connection between a safety PLC

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(such as AC500-S) and the ACS880 drive.
The connection is achieved by adding a PROFINET adapter, FPNO-21/FENA-21, to the drive.

Supported safety functions:
- Encoderless: SS1-t, SS1-r, SLS, SBC, SMS, SSE, POUS, STO
- With encoder (requires FSO-21 + FSE-31): SDI, SSM, SS1-t, SS1-r, SLS, SBC, SMS, SSE, POUS, STO

Pulse encoder interface module, FSE-31, provides safe encoder data to the safety functions module, and can simultaneously be used as a feedback device for the drive. FSE-31 requires an FSO-21 safety functions module and supports HTL encoders.

Thermistor protection modules, FPTC-01 and FPTC-02
Offer safe temperature monitoring (STM) using FPTC thermistor protection modules. [1)]

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Safety function modules

Option code	Ordering code for loose item	Description	Safety module
+Q973	3AXD50000016771	Safety functions module FSO-12	FSO-12
+Q972+L521	3AXD50000023987 + 3AXD50000023272	Safety functions module FSO-21 and encoder FSE-31	FSO-21+FSE-31
+Q982	–	PROFIsafe safety communication to be used together with FSO-12 or FSO-21: forces to select a functional safety module and PROFINET adapter, FPNO-21	FSO-12 or FSO-21 +FPNO-21
+Q986 [2)]	3AXD50000112821	PROFIsafe safety functions module FSPS-21	FSPS-21
+L536	3AXD50000024934	Thermistor protection module FPTC-01	FPTC-01

[1)] Thermistor modules comply with SIL 2 / PL c.
[2)] Please contact your local ABB office to check availability.

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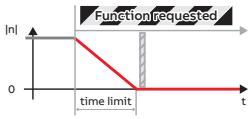
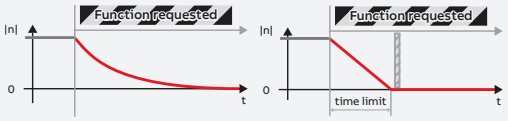
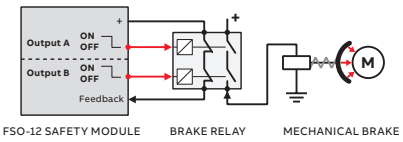
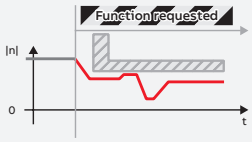
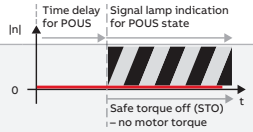
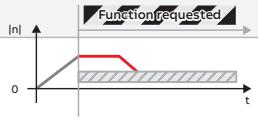
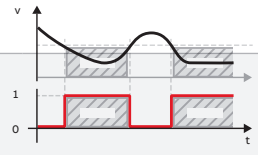
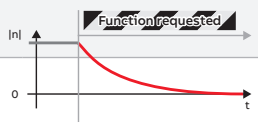
Safety function	Description	Supported functions			
		FSPS-21	FSO-12 without encoder	FSO-21 + FSE-31 + HTL encoder	
Safe stop 1 **SS1-t** **SS1-r**	Brings the machine to a stop using a monitored deceleration ramp. It is typically used in applications where the machinery motion needs to be brought to a stop (stop category 1) in a controlled way before switching over to the no-torque (STO) state	x (SS1-t)	x (SS1-t) (SS1-r)	x (SS1-t) (SS1-r)	
Safe stop emergency **SSE**	Can be configured to, upon request, either activate STO instantly (category 0 stop), or first initiate motor deceleration and then, once the motor has stopped, activate the STO (category 1 stop).		x	x	
Safe brake control **SBC**	Provides a safe output for controlling the motor's external (mechanical) brakes, together with STO.		x	x	
Safely-limited speed **SLS**	Ensures that the specified speed limit of the motor is not exceeded. This allows machine interaction to be performed at slow speed without stopping the drive. The safety functions module comes with four individual SLS settings for speed monitoring.		x	x	
Safe maximum speed **SMS**	Monitors configured maximum speed limit.		x	x	
Prevention of unexpected start-up **POUS**	Ensures that the machine remains stopped when people are in the danger area.		x	x	
Safe direction SDI	Ensures that rotation is allowed only in the selected direction (available only with FSO-21 and FSE-31).			x	
Safe speed monitor **SSM**	Provides a safe output signal to indicate whether the motor speed is between user-defined limits (available only with FSO-21).			x	
Safe Torque Off **STO**	Brings the drive safely to a no-torque state, i.e. switches off the drive output to the motor, motor then coasts to a stop. ACS880 has safe torque off as standard.	x	x	x	

EMC – electromagnetic compatibility

Each ACS880 model can be equipped with a built-in filter to reduce high-frequency emissions.

What is EMC?
EMC stands for electromagnetic compatibility. It is the ability of electrical/electronic equipment to operate without problems in an electromagnetic environment.

Likewise, the equipment must not disturb or interfere with any other product or system in its locality. This is a legal requirement for all equipment taken into service within the European Economic Area (EEA).

Installation environments
A power drive system (PDS) can be connected to either industrial or public power distribution networks.
The environment class depends on the way the PDS is connected to power supply.

The **1st environment** includes domestic premises. It also includes establishments directly connected without an intermediate transformer to a low voltage power supply network that supplies buildings used for domestic purposes.

The **2nd environment** includes all establishments directly connected to public low voltage power supply networks.

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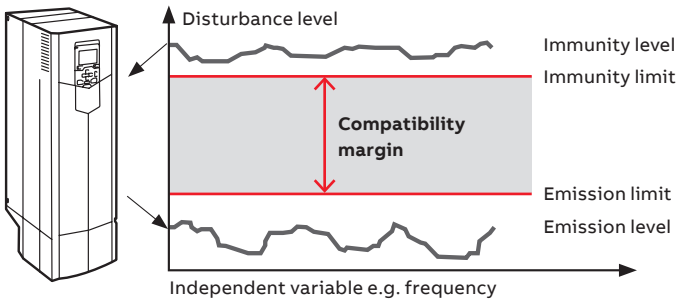
Immunity and emission compatibility



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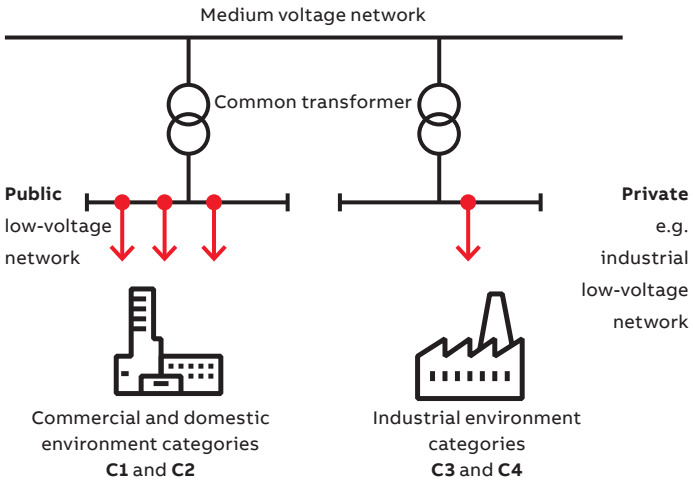
Installation environments



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The product standard EN 61800-3 divides PDSs into four categories according to the intended use

C1 – 1st environment
- Household appliances
- Usually plug connectable to any wall outlet
- Anyone can connect these to the network
- Examples: washing machines, TV sets, computers, microwave ovens, etc.

C2 – 1st environment
- Fixed household and public appliances
- Need to be installed or operated by a professional
- Examples: elevators, rooftop fans, residential booster pumps, gates and barriers, supermarket freezers, etc.

C3 – 2nd environment
- Professional equipment
- Needs to be installed or operated by a professional
- In some rare cases, may also be pluggable
- Examples: any equipment for industrial usage only, such as conveyors, mixers, etc.

C4 – 2nd environment
- Professional equipment
- Needs to be fixed installation and operated by a professional
- Examples: paper machines, rolling mills, etc.

Comparison of EMC standards

EN 61800-3, product standard	EN 61800-3, product standard	EN 55011, product family standard for industrial, scientific and medical (ISM) equipment	EN 61000-6-4, generic emission standard for industrial environments	EN 61000-6-3, generic emission standard for residential, commercial and light-industrial environments
Category C1	1st environment, unrestricted distribution	Group 1. Class B	Not applicable	Applicable
Category C2	1st environment, restricted distribution	Group 1. Class A	Applicable	Not applicable
Category C3	2nd environment, unrestricted distribution	Group 2. Class A	Not applicable	Not applicable
Category C4	2nd environment, restricted distribution	Not applicable	Not applicable	Not applicable

Selecting an EMC filter

Drive type	Voltage (V)	Frame sizes	1st environment, restricted distribution, C2, grounded network (TN) Option code	2nd environment, C3, grounded network (TN) Option code	2nd environment, C3, ungrounded network (IT) Option code	2nd environment, C4, grounded network (TN) [2]
ACS880-01	208 to 240	R1 to R8	+E202	+E200	+E201	–
ACS880-01	380 to 500	R1 to R9	+E202	+E200	+E201 [1]	As standard
ACS880-01	525 to 690	R3 to R9	–	+E200	+E201 [1]	As standard
ACS880-11	380 to 500	R3 to R8	+E202	+E200	+E201	As standard
ACS880-31	380 to 500	R3 to R8	+E202	+E200	+E201	As standard
ACS880-07	380 to 500	R6 to R9	+E202	+E200	+E201	As standard
ACS880-07	525 to 690	R6 to R9	–	+E200	+E201 [1]	As standard
ACS880-07	380 to 500	R10 to R11	+E202	+E200	+E201	As standard
ACS880-07	525 to 690	R10 to R11	–	+E200	+E201	As standard
ACS880-07	380 to 690	n×R8i	+E202 (only for 1140A-3 and 1070A-5)	As standard	As standard	–
ACS880-17	380 to 500	R8	+E202	+E200	+E201	As standard
ACS880-17	380 to 690	R11	+E202 (not for 690 V)	As standard	As standard [3]	–
ACS880-17	380 to 690	n×R8i	+E202 (not for 690 V, only for 1xR8i)	As standard	As standard	–
ACS880-37	380 to 500	R8	+E202	+E200	+E201	As standard
ACS880-37	380 to 690	R11	+E202 (not for 690 V)	As standard	As standard [3]	–
ACS880-37	380 to 690	n×R8i	+E202 (not for 690 V, only for 1xR8i)	As standard	As standard	–
ACS880-07CLC	525 to 690	n×R8i	–	As standard [4]	As standard [4]	As standard
ACS880-17LC	525 to 690	n×R8i	–	As standard [4]	As standard [4]	As standard
ACS880-37LC	525 to 690	n×R8i	–	As standard [4]	As standard [4]	As standard

[1] 2nd environment, C4: ACS880-01, 380 to 500 V, frame sizes R1 to R5. ACS880-01, 690 V, frame sizes R3 to R6. ACS880-07, 690 V, frame size R6.
[2] EMC plan required.
[3] Please contact your local ABB.
[4] Radiated emission and immunity (cabinet construction).
[5] Not available for R6.

ACS880 drives are compatible with the wide ABB product offering

Programmable Logic Controllers PLCs
The AC500, AC500-eCo, AC500-S and AC500-XC scalable PLCs provide solutions for small, medium and high-end applications. Our AC500 PLC platform offers different performance levels and is the ideal choice for all applications including condition monitoring, motion control and safety solutions.

AC motors
ABB's low voltage AC motors are designed to save energy, reduce operating costs and minimize unscheduled downtime.

Control panels
CP600-eCo, CP600 and CP600-Pro control panels offer a wide range of features and functionalities for maximum operability. ABB control panels are distinguished by their robustness and easy usability. These panels can provide all the relevant information from production plants and machines at one single touch.

All-compatible drives portfolio
The all-compatible drives share the same architecture; software platform, tools, user interfaces and options. Yet, there is an optimal drive from the smallest water pump to the biggest cement kiln.

Safety products
ABB safety products help machine builders create production-friendly and safe work environments for operators. We deliver machine safety solutions for single machines or entire production lines. Our vast experience with helping customers create solutions for demanding environments has made ABB experts in balancing production demands with safety requirements.

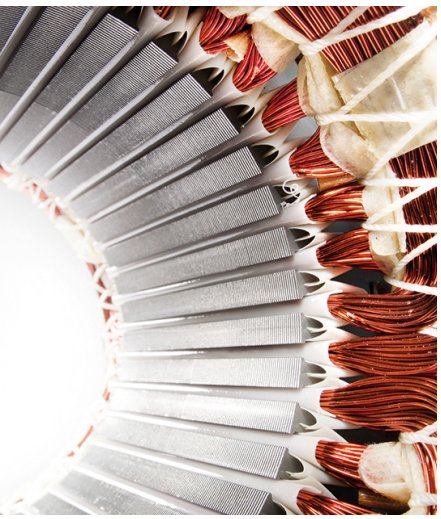
Choose the right motor for your application

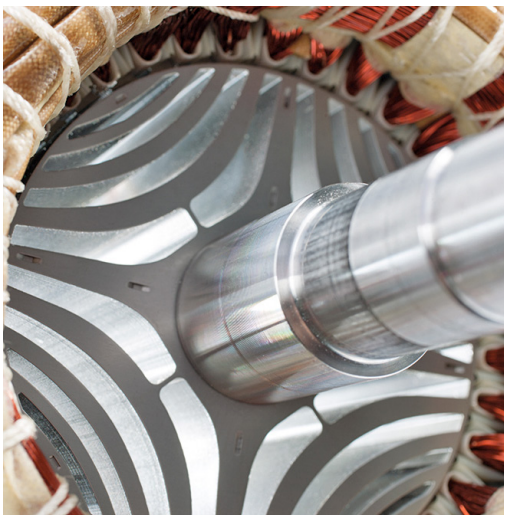
Induction motors and the ACS880: a reliable combination
Induction motors are used throughout industry in applications that demand robust and high performance motor and drive solutions. ACS880 drives and ABB motors fit perfectly together providing comprehensive functionality, yet simple operation. The drives are ideal for environments that require a high degree of protection and small footprint. ACS880 drives come with DTC as standard, ensuring high torque and speed accuracy. Our motors and drives provide the perfect foundation for energy efficiency.

Permanent magnet motors and the ACS880: smooth operation
Permanent magnet technology is used for improved energy efficiency and reduced motor size. This technology is particularly well-suited for low-speed control applications, as in some cases it eliminates the need to use gearboxes. Permanent magnet motor characteristics can vary considerably. Even without speed or rotor position sensors, ACS880 drives with DTC can control most types of permanent magnet motors.

IE5 synchronous reluctance motors and the ACS880: optimized energy efficiency
Combining the ACS880's control technology with ABB synchronous reluctance (SynRM) motors provides an IE5 motor and drive package that ensures high energy efficiency, reduces motor temperatures and provides a significant reduction in motor noise. Lower temperature results in better motor reliability and longer motor life.

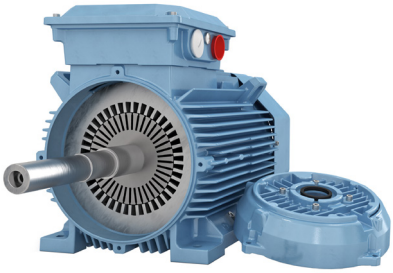
ABB has tested SynRM motor and drive packages and produced manufacturer's statements providing verified system (drive and motor) efficiency.



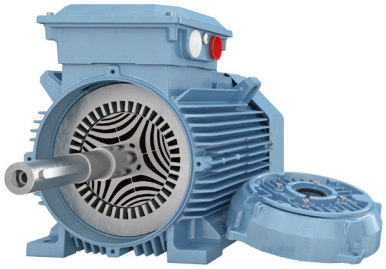


Synchronous reluctance motors

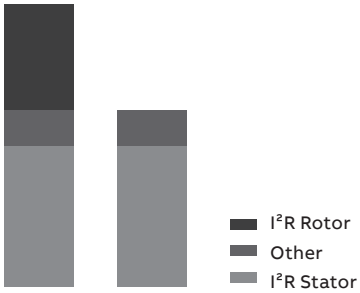
Ultimate efficiency and reliability to optimize your cost of ownership



Traditional induction motor



IE5 SynRM motor



Losses IM vs SynRM

Innovation inside
The idea is simple. Take a conventional, proven stator technology and an innovative rotor design. Then combine them with an ABB drive loaded with versatile software. Finally, optimize the whole package for compressors, conveyors, pumps, extruders, fans and many other variable and constant torque applications.

Magnet-free design
Synchronous reluctance technology combines the performance of a permanent magnet motor with the simplicity of an induction motor. The new rotor has neither magnets nor windings, and suffers virtually no power losses. And because there are no magnetic forces in the rotor, maintenance is as straightforward as with induction motors.

Superior reliability
International Efficiency class IE5 synchronous reluctance motors (SynRM) have very low winding temperatures, which increases the reliability and lifetime of the winding. Also, a cooler running synchronous reluctance rotor means significantly lower bearing temperatures – an important factor since bearing failures cause about 70 percent of unplanned motor outages.

Perfect for retrofits
The SynRM package is a perfect solution for motor retrofits. The IE5 SynRM is the same size as an IE3 induction motor, eliminating the need for mechanical modifications.

Full motor control, down to zero speed
Many processes require accurate speed control. SynRM always runs at reference speed with practically no error, without an encoder. Even the best slip compensation systems in an induction motor inverter will never match the precision of SynRM. Sometimes your application may require you to run your motor at slow speeds. If you are using SynRM and your drive cannot provide the necessary torque, it may trip. ABB drives provide full control and torque down to zero speed.

For all applications
This is important if you are planning on using the motor with applications other than quadratic torque applications like pumps and fans. Our drives provide full SynRM motor control for constant torque applications including extruders, conveyors and wire drawing machines.

SynRM technology	Benefit
Higher efficiency IE5	Lowest energy consumption
No rare earth metals	Environmental sustainability
Magnet-free rotor	Easy service
Lower winding and bearing temperatures	Longer life time, extended service intervals
Better controllability	Accurate speed and torque control
Lower noise level	Better working and living environment
Same size with IE3	Perfect for retrofits

Our service expertise, your advantage

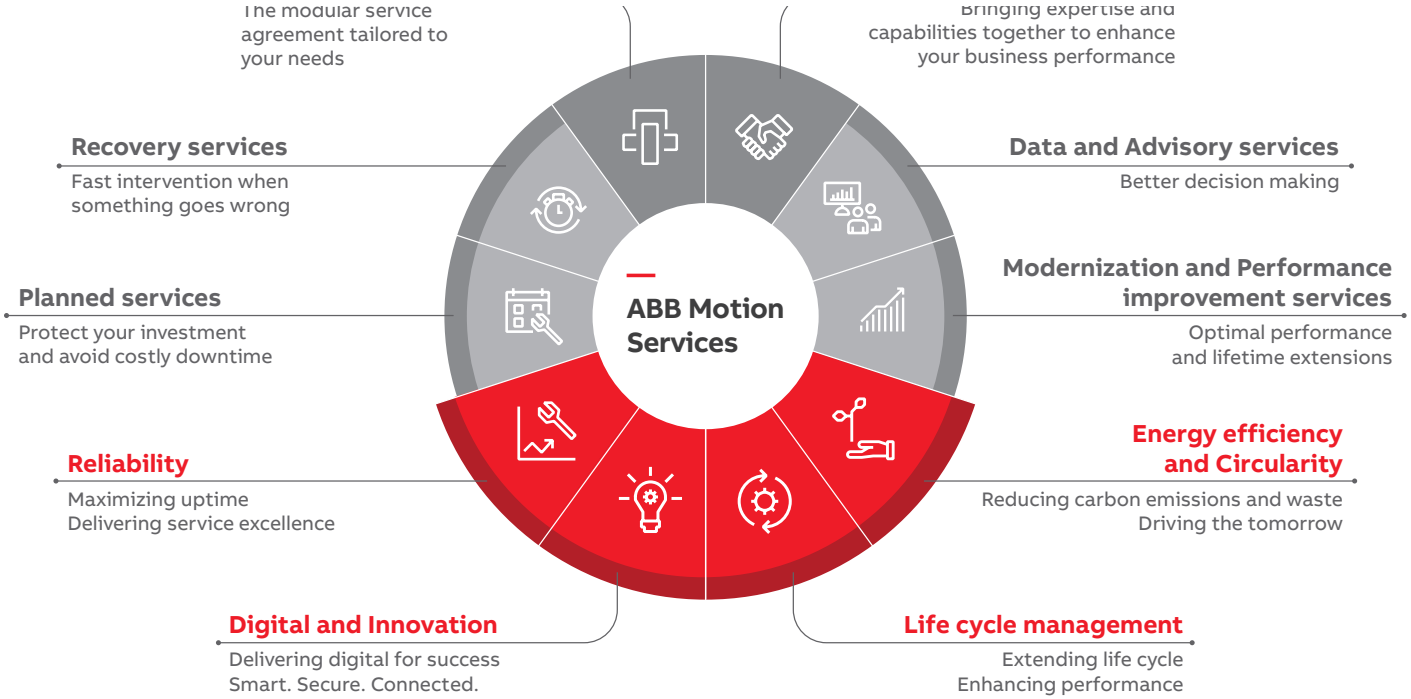
ABB Motion Services helps customers around the globe by maximizing uptime, extending product life cycle, and enhancing the performance and energy efficiency of electrical motion solutions. We enable innovation and success through digitalization by securely connecting and monitoring our customers' motors and drives, increasing operational uptime, and improving efficiency. We make the difference for our customers and partners every day by keeping their operations running profitably, safely and reliably.

With a service offering tailored to your needs, ABB Motion Services maximizes the uptime and extends the life cycle of your electrical motion solutions, while optimizing their performance and maximizing your energy efficiency gains throughout the entire lifetime of your applications.
We help keep your applications profitable, safe, and reliable.

Digitalization enables new smart and secured ways to prevent unexpected downtime while optimizing the operation and maintenance of your assets. We securely connect and monitor your motors, drives or your entire powertrain to our easy-to-use cloud service solutions. Connecting your applications also gives you access to our in-depth service domain expertise.

We quickly respond to your service needs. Together with our partners, local field service experts, and service workshop networks, we provide and install original spare parts to help resolve any issues and minimize the impact of unexpected disruptions.

Our service offerings and digital solutions are tailored to your needs and will enable you to unlock new possibilities. Not only are we your premier supplier of motion equipment, we are your trusted partner and advisor offering support throughout the entire life cycle of your assets. We ensure your operations run profitably, safely and reliably and continue to drive real world results, now and in the future. Our service teams work with you, delivering the expertise needed to keep your world turning while saving energy every day.



OUR EXPERTISE

Drivetune mobile application for wireless access

User-friendly experience with Bluetooth connectivity.

Drivetune mobile app is a powerful tool for performing basic drive startup and troubleshooting tasks. It is possible to connect with drives and access data available in the Internet at the same time. The wireless Bluetooth connectivity means that users won't need to enter hazardous or difficult-to-reach work areas to access information necessary to help them commission and tune the drive.

- Startup, commission and tune your drive and application with full parameter access
- Optimize performance via drive troubleshooting features
- Create and share backups and support packages
- Review drives installed base

ABB Ability™ Mobile Connect for drives is a module in the Drivetune app that gives you the access to drive technical support for fast problem solving. Mobile Connect makes all the necessary data instantly available to the expert providing support.

Remote and rapid access to ABB's drive experts can save you and your team considerable time, money and headaches.

Drive with Bluetooth panel

Mobile device with Drivetune app

Expert help with Mobile Connect license

Download Drivetune

GET IT ON Google play

Available on the App Store

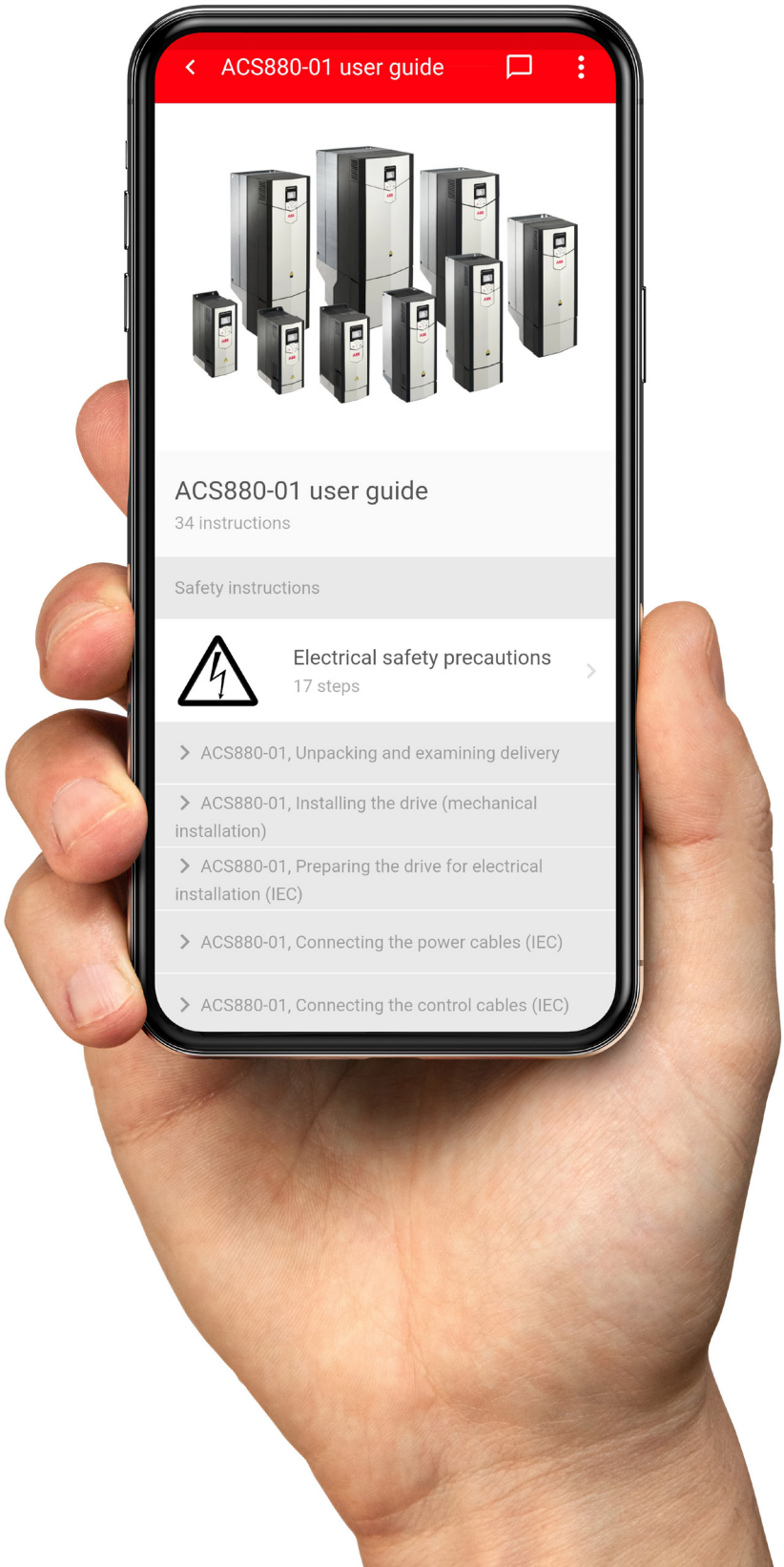
Drivetune for commissioning and managing drives

ABB SmartGuide – ACS880-01

ABB SmartGuide is one of the handiest ways to get short and clear visual instructions on drive installation, startup and operation.

Mobile friendly digital user guides provide simple and animated step-by-step instructions to assist with wall mounting of drives, electrical installation and drive programming. The content is frequently updated and further developed, making it your comprehensive source of instructions and help.

Scan the QR code and test it yourself!



https://drives-abb.swipeguide.com/guide/acs880-01-user-guide
https://drives-abb.swipeguide.com/

Summary of features and options

ACS880 air-cooled single drives

	Ordering code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i[8]
Mounting							
Wall-mounting		●	●	–	–	–	–
For cabinet mounting	+P940	□	□	–	–	–	–
	+P944	□	–	–	–	–	–
Cabinet-built		–	–	●	●	●	●
Vibration dampers	+C131	□	□	–	–	–	–
Flange mounting	+C135	□[15]	□[15]	–	–	–	–
Cabling							
Bottom entry and exit		●	●	●	●	●	●
Top entry and exit	+H351, +H353	–	–	□	□	□	□
Degree of protection							
IP20 (UL open type)	+P940	□	□	–	–	–	–
	+P944	□	–	–	–	–	–
UL (NEMA) Type 1 / IP21		●	●	–	–	–	–
UL (NEMA) Type 1 / IP22		–	–	●	●	●	●
UL (NEMA) Type 1 / IP42	+B054	–	–	□	□	□	□
UL (NEMA) Type 12 / IP54	+B055	–	–	□	□	□	□
UL (NEMA) Type 12 / IP55	+B056	□	□	–	–	–	–
Nickel plated busbars (tin plating as standard)[30]	+C255	□	–	–	–	–	–
Motor control							
DTC motor control		●	●	●	●	●	●
Control panel							
Intuitive control panel		●[1]	●[1]	●	●	●	●
Integrated control panel holder in the drive		●	●	●	●	●	●
Control panel mounting platform DPMP-01 (flush) / DPMP-02 (surface)		■	■	●	●	●	●
EMC filters							
EMC 1st environment, restricted distribution, C2, grounded network (TN)	+E202	□[2]	□	□[2]	□[16]	□[19]	□[22]
EMC 2nd environment, C3, grounded network (TN)	+E200	□[3]	□	□[3]	●	□[20]	●
EMC 2nd environment, C3, ungrounded network (IT)	+E201	□[4]	□	□[4]	●	□[23]	●
Line filter							
AC or DC choke		●	–	●	●	–	–
Advanced line harmonic filter (LCL)		–	●	–	–	●	●
Output filter							
Common mode filter	+E208	□	□	□	●	□[28]	●
du/dt filters	+E205	–	–	□	●	□	●
Braking (see braking unit table)							
Brake chopper	+D150	●[5]	–	□	□[6]	□	□
Brake resistor	+D151	–	–	□	□[6]	□	□

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code

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ACS880 air-cooled single drives

	Ordering code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i[8)]
Software							
Primary control program		●	●	●	●	●	●
Drive application programming based on IEC 61131-3 using Drive Application Builder (available for primary control program)	+N8010	□	□	□	□	□	□
Application control program for winder	+N5000	□	□	□	□	□	□
Application control program for crane	+N5050	□	□	□	□	□	□
Application control program for winch	+N5100	□	□	□	□	□	□
Application control program for centrifuge/decanter	+N5150	□	□	□	□	□	□
Application control program for PCP pump	+N5200	□	□	□	□	□	□
Application control program for Rod pump	+N5250	□	□	–	–	–	–
Application control program for test bench	+N5300	□	□	□	□	□	□
Application control program for cooling tower direct drive	+N5350	□	□	□	□	□	□
Application control program for override control	+N5450	□	□	□	□	–	□
Application control program for spinning and traverse	+N5500	□	[17)]	–	–	□	–
Application control program for chemical industry process control	+N5550	□	[17)]	–	–	–	–
Application control program for ESP pumps	+N5600	□	□	□	□	□	□
Application control program for tower cranes	+N5650	□	□	–	–	–	–
Application control program for position control	+N5700	□	□	□	□	□	□
Application control program for anticavitation	+N5900	□	□	–	–	–	–
Support for asynchronous motor		●	●	●	●	●	●
Support for permanent magnet motor		●	●	●	●	●	●
Support for synchronous reluctance motor (SynRM)	+N7502	□	□	□	□	□	□
High speed operation up to 598 Hz output frequency. Operation above 598 Hz requires also +N8200.	+N7500	□[8, 29)]	–	–	–	–	–
High speed license. Allows high speed operation above 598 Hz output frequency.	+N8200	□[24)]	–	□[24)]	□[24)]	□[24)]	□[24)]
Rectifier bridge							
12-pulse	+A004	–	–	–	□	–	–
Line side apparatus							
aR line fuses		–	–	●	●	●	●
Main switch		–	–	●	●	●	●
Line contactor	+F250	–	–	□	□[10)]	●	●[11)]
Air circuit breaker	+F255	–	–	–	□[7)]	–	●[12)]
Earthing switch	+F259	–	–	–	□	–	□
Cabinet options							
Cabinet heater (ext. supply)	+G300	–	–	□	□	□	□
Output for motor heater (ext. supply)	+G313	–	–	□	□	□	□
Customized options	+P902	–	–	□	□	□	□

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code

ACS880 air-cooled single drives

	Ordering code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i [8]
Safety functions [18]							
Safe torque off (STO)		●	●	●	●	●	●
Safety functions module, FSO-12, without encoder, configurable functions: - Safe stop 1 (SS1-t, SS1-r), - Safely-limited speed (SLS) - Safe brake control (SBC) - Safe maximum speed (SMS) - Safe stop emergency (SSE) - Prevention of unexpected start-up (POUS) - Safe torque off (STO)	+Q973	□	□	□	□	□	□
Safety functions module, FSO-21, with encoder support, configurable functions: - Safe stop 1 (SS1-t, SS1-r) - Safely-limited speed (SLS) - Safe brake control (SBC) - Safe maximum speed (SMS) - Safe stop emergency (SSE) - Prevention of unexpected start-up (POUS) - Safe direction (SDI), requires encoder feedback, FSE-31 - Safe speed monitoring (SSM) - Safe torque off (STO)	+Q972	□	□	□	□	□	□
Pulse encoder interface module, FSE-31	+L521	□	□	□	□	□	□
PROFIsafe over PROFINET	+Q982	□	□	□	□	□	□
PROFIsafe safety functions module, FSPS-21	+Q986	□	□	□	□	□ [8]	□ [8]
Prevention of unexpected start-up with safety relay (preconfigured)	+Q957	–	–	□	□	□	□
Prevention of unexpected start-up with FSO-12 and -21 (preconfigured)	+Q950	–	–	□	□	□	□
Emergency stop, category 0 with opening the main contactor/breaker, with safety relay (preconfigured)	+Q951	–	–	□	□	□	□
Emergency stop, category 1 with opening the main contactor/breaker, with safety relay (preconfigured)	+Q952	–	–	□	□	□	□
Emergency stop, category 0 with STO, with safety relay (preconfigured)	+Q963	–	–	□	□	□	□
Emergency stop, category 1 with STO, with safety relay (preconfigured)	+Q964	–	–	□	□	□	□
Emergency stop, configurable category 0 or 1 with opening the main contactor/breaker, with FSO-12 and -21 (preconfigured)	+Q978	–	–	□	□	□	□
Emergency stop, configurable category 0 or 1 with STO and FSO-12 and -21 (preconfigured)	+Q979	–	–	□	□	□	□
Safely-limited speed with encoder, with FSO-21 and FSE-31 (preconfigured)	+Q965	–	–	□	□	□	□
Earth fault protection							
Earth fault monitoring, earthed mains		●	●	●	●	●	●
Earth fault monitoring, unearthed mains	+Q954	–	–	□	□	□	□

• Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code

ACS880 air-cooled single drives

	Ordering code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i [8]
Control connections (I/O) and communications							
2 pcs analog inputs, programmable, galvanically isolated		●	●	●	●	●	●
2 pcs analog outputs, programmable		●	●	●	●	●	●
6 pcs digital inputs, programmable, galvanically isolated – can be divided into two groups		●	●	●	●	●	●
2 pcs digital inputs/outputs		●	●	●	●	●	●
1 pcs digital input interlock		●	●	●	●	●	●
3 pcs relay outputs programmable		●	●	●	●	●	●
Drive-to-drive link/Built-in Modbus		●	●	●	●	●	●
Assistant control panel/PC tool connection		●	●	●	●	●	●
Possibility for external power supply for control unit		●	●	●	●	●	●
Built-in I/O extension and speed feedback modules: for more details see sections: “Input/output extension modules”, “Speed feedback interfaces for precise process control” and “DDCS communication option modules” [25]		□	□	□	□	□	□
Built-in adapters for several communication protocols: for more details see section “Communication protocol adapters” [26]		□	□	□	□	□	□
Approvals							
CE, UKCA		●	●	●	●	●	●
UL, cUL	+C129	●	●	□	□	□	□
CSA	+C134	●	●	□	□	□	□
EAC/GOST R [9]		●	●	●	●	●	●
RoHS		●	●	●	●	●	●
RCM		●	●	●	●	●	●
Marine type approvals [13]	+C132	□ [13]	□ [13]	□ [13]	□ [13]	□ [13]	□ [13]
Marine construction	+C121	–	–	□	□	□	□
Marine product certification for essential applications		□ [8]	–	□ [8]	□ [8]	–	–
TÜV nord certificate for safety functions		●	●	●	●	●	●
SEMI F47		●	●	●	●	●	●

• Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code
– Not available

[1] Without control panel, +0J400
[2] For frame sizes R1 to R9, 380 to 500 V (-01). For frame sizes R6 to R11, 380 to 500 V (-07).
[3] For frame sizes R1 to R9, 380 to 500 V, and frame sizes R3 to R9, 690 V (-01). For frame sizes R6 to R11, 380 to 690 V (-07).
[4] For frame sizes R6 to R9, 380 to 500 V, and frame sizes R7 to R9, 690 V (-01). For frame sizes R6 to R9, 380 to 500 V and frame size R6, 690 V and frame sizes R10 to R11, 380 to 690 V (-07).
2nd environment C4 for frame sizes R1 to R5, 380 to 500 V, and frame sizes R3 to R6, 690 V (-01).
[5] Frame sizes R1 to R4 built-in and R5 to R9 as selectable option
[6] 2×R8i
[7] 2×D8T to 4×D8T
[8] Check availability from local ABB
[9] EAC has replaced GOST R
[10] D8T, 2×D7T and 2×D8T
[11] R8i to 2×R8i, 400 to 500 V. R8i to 3×R8i, 690 V
[12] 3×R8i, 400 to 500 V. 4×R8i and 6×R8i, 690 V
[13] ACS880 marine type approvals and type approved drives are listed at https://new.abb.com/drives/segments/marine/marine-type-approvals.
[14] For cabinet-built drives (-07)
[15] Available only with IP20 (+P940 or +P944)
[16] For 1140A-3 and 1070A-5 (-07 nxR8i).
[17] Pending
[18] Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options. FSO-xx can also be mounted on a DIN rail by using a separate installation kit. DIN rail mounting does not consume the drive's option slots. With frames R6 to R11 it is possible to mount the FSO-xx inside the drive without using the drive's option slots.
[19] For frame sizes R8 and R11, 380 to 500 V (-17, -37).
[20] For frame size R8, 380 to 500 V (-17,-37). As standard for R11, 380 to 690 V.
[21] Only for frame size R11.
[22] Only for frame size 1xR8i, 380 to 500 V (-17,-37).
[23] For frame size R8, 380 to 500 V (-17,-37). For R11, 380 to 690 V, please contact your local ABB.
[24] For availability and further information, please contact your local ABB office.
[25] Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options.
The slot number for I/O and encoder options can be extended with FEA-03 option. Please note that functional safety and communication protocol adapters cannot be used with FEA-03.
[26] Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options.
[27] For ACS880-37LC.
[28] Common mode filter (+E208) is standard for 690 V devices.
[29] Available for voltages from 380 to 500 V.
[30] Frames R5 – R9 available through the Must Win process.

ACS880 liquid-cooled single drives

	Ordering code	ACS880-07LC nxR8i	ACS880-07CLC nxR8i	ACS880-17/37LC nxR8i
Mounting				
Wall-mounting		–	–	–
For cabinet mounting	+P940	–	–	–
	+P944	–	–	–
Cabinet-built		●	●	●
Flange mounting	+C135	–	–	–
Cabling				
Bottom entry and exit		●	●	●
Top entry and exit		□	–	□
Degree of protection				
IP20 (UL open type)	+P940	–	–	–
	+P944	–	–	–
UL (NEMA) Type 1 / IP21		–	–	–
UL (NEMA) Type 1 / IP22		–	–	–
UL (NEMA) Type 1 / IP42	+B054	●	●	●
UL (NEMA) Type 12 / IP54	+B055	□	□	□
UL (NEMA) Type 12 / IP55	+B056	–	–	–
Motor control				
DTC motor control		●	●	●
Control panel				
Intuitive control panel		●	●	●
Integrated control panel holder in the drive		–	–	–
Control panel mounting platform DPMP-01 (flush) / DPMP-02 (surface)		–	–	–
EMC filters				
EMC 1st environment, restricted distribution, C2, grounded network (TN)	+E202	–	–	–
EMC 2nd environment, C3, grounded network (TN)	+E200	–	–	–
EMC 2nd environment, C3, ungrounded network (IT)	+E201	–	–	–
EMC 2nd environment, C3, grounded (TN) and ungrounded (IT)	+E210	●	●	●
Line filter				
AC or DC choke		●	–	–
Advanced line harmonic filter (LCL)		–	–	●
Output filter				
Common mode filter	+E208	●	●	●
du/dt filters	+E205	●	●	●
Braking (see braking unit table)				
Brake chopper	+D150	□	□	□ [27)]
Brake resistor	+D151	□	□	□ [27)]

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code

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ACS880 liquid-cooled single drives

	Ordering code	ACS880-07LC nxR8i	ACS880-07CLC nxR8i	ACS880-17/37LC nxR8i
Software				
Primary control program		●	●	●
Drive application programming based on IEC 61131-3 using Drive Application Builder (available for primary control program)	+N8010	□	□	□
Application control program for winder	+N5000	□	–	□
Application control program for crane	+N5050	□	□	□
Application control program for winch	+N5100	□	□	□
Application control program for centrifuge/decanter	+N5150	□	□	□
Application control program for PCP pump	+N5200	□	□	□
Application control program for Rod pump	+N5250	□	–	□
Application control program for test bench	+N5300	□	–	□
Application control program for cooling tower direct drive	+N5350	–	–	–
Application control program for override control	+N5450	□	–	□
Application control program for spinning and traverse	+N5500	–	–	–
Application control program for chemical industry process control	+N5550	–	–	–
Application control program for ESP pumps	+N5600	□	□	□
Application control program for tower cranes	+N5650	–	–	–
Application control program for position control	+N5700	□[24)]	□[24)]	□[24)]
Support for asynchronous motor		●	●	●
Support for permanent magnet motor		●	●	●
Support for synchronous reluctance motor (SynRM)	+N7502	□	□	□
High speed license. Allows high speed operation above 598 Hz output frequency.	+N8200	□[24)]	□[24)]	□[24)]
Rectifier bridge				
12-pulse	+A004	□	□	–
24-pulse		–	□	–
Line side apparatus				
aR line fuses		●	●	●
Main switch		–	–	–
Line contactor	+F250	–	–	–
Air circuit breaker	+F255	●	–	●
Earthing switch	+F259	□	–	□
Cabinet options				
Cabinet heater (ext. supply)	+G300	□	□	□
Output for motor heater (ext. supply)	+G313	□	□	□
Customized options	+P902	●	●	●

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code

ACS880 liquid-cooled single drives

	Ordering code	ACS880-07LC nxR8i	ACS880-07CLC nxR8i	ACS880-17/37LC nxR8i
Safety functions [18]				
Safe torque off (STO)		●	●	●
Safety functions module, FSO-12, without encoder, configurable functions: - Safe stop 1 (SS1-t, SS1-r), - Safely-limited speed (SLS) - Safe brake control (SBC) - Safe maximum speed (SMS) - Safe stop emergency (SSE) - Prevention of unexpected start-up (POUS) - Safe torque off (STO)	+Q973	□	–	□
Safety functions module, FSO-21, with encoder support, configurable functions: - Safe stop 1 (SS1-t, SS1-r) - Safely-limited speed (SLS) - Safe brake control (SBC) - Safe maximum speed (SMS) - Safe stop emergency (SSE) - Prevention of unexpected start-up (POUS) - Safe direction (SDI), requires encoder feedback, FSE-31 - Safe speed monitoring (SSM) - Safe torque off (STO)	+Q972	□	–	□
Pulse encoder interface module, FSE-31	+L521	□	–	□
PROFIsafe over PROFINET	+Q982	□	–	□
PROFIsafe safety functions module, FSPS-21	+Q986	□	–	□
Prevention of unexpected start-up with safety relay (preconfigured)	+Q957	□	–	□
Prevention of unexpected start-up with FSO-12 and -21 (preconfigured)	+Q950	□	–	□
Emergency stop, category 0 with opening the main contactor/breaker, with safety relay (preconfigured)	+Q951	□	□	□
Emergency stop, category 1 with opening the main contactor/breaker, with safety relay (preconfigured)	+Q952	□	–	□
Emergency stop, category 0 with STO, with safety relay (preconfigured)	+Q963	□	–	□
Emergency stop, category 1 with STO, with safety relay (preconfigured)	+Q964	□	–	□
Emergency stop, configurable category 0 or 1 with opening the main contactor/breaker, with FSO-12 and -21 (preconfigured)	+Q978	□	–	□
Emergency stop, configurable category 0 or 1 with STO and FSO-12 and -21 (preconfigured)	+Q979	□	–	□
Safely-limited speed with encoder, with FSO-21 and FSE-31 (preconfigured)	+Q965	□	–	□
Earth fault protection				
Earth fault monitoring, earthed mains		●	●	●
Earth fault monitoring, unearthed mains	+Q954	□	□	□

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code

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ACS880 liquid-cooled single drives

	Ordering code	ACS880-07LC nxR8i	ACS880-07CLC nxR8i	ACS880-17/37LC nxR8i
Control connections (I/O) and communications				
2 pcs analog inputs, programmable, galvanically isolated		●	●	●
2 pcs analog outputs, programmable		●	●	●
6 pcs digital inputs, programmable, galvanically isolated – can be divided into two groups		●	●	●
2 pcs digital inputs/outputs		●	●	●
1 pcs digital input interlock		●	●	●
3 pcs relay outputs programmable		●	●	●
Drive-to-drive link/Built-in Modbus		●	●	●
Assistant control panel/PC tool connection		●	●	●
Possibility for external power supply for control unit		●	●	●
Built-in I/O extension and speed feedback modules: for more details see sections: “Input/output extension modules”, “Speed feedback interfaces for precise process control” and “DDCS communication option modules” [25]		□	□	□
Built-in adapters for several communication protocols: for more details see section “Communication protocol adapters” [26]		□	□	□
Approvals				
CE, UKCA		●	●	●
UL, cUL	+C129	□	□	□
CSA	+C134	□ [17]	□ [17]	□ [17]
EAC/GOST R [9]		●	–	●
RoHS		●	●	●
RCM		●	●	●
Marine type approvals [13]	+C132	□	□	□
Marine construction	+C121	□	□	□
Marine product certification for essential applications		□ [8]	□ [8]	□ [8]
TÜV nord certificate for safety functions		●	●	●
SEMI F47		●	●	●

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code
– Not available

[1] Without control panel, +0J400
[2] For frame sizes R1 to R9, 380 to 500 V (-01). For frame sizes R6 to R11, 380 to 500 V (-07).
[3] For frame sizes R1 to R9, 380 to 500 V, and frame sizes R3 to R9, 690 V (-01). For frame sizes R6 to R11, 380 to 690 V (-07).
[4] For frame sizes R6 to R9, 380 to 500 V, and frame sizes R7 to R9, 690 V (-01). For frame sizes R6 to R9, 380 to 500 V and frame size R6, 690 V and frame sizes R10 to R11, 380 to 690 V (-07).
2nd environment C4 for frame sizes R1 to R5, 380 to 500 V, and frame sizes R3 to R6, 690 V (-01).
[5] Frame sizes R1 to R4 built-in and R5 to R9 as selectable option
[6] 2×R8i
[7] 2×D8T to 4×D8T
[8] Check availability from local ABB
[9] EAC has replaced GOST R
[10] D8T, 2×D7T and 2×D8T
[11] R8i to 2×R8i, 400 to 500 V. R8i to 3×R8i, 690 V
[12] 3×R8i, 400 to 500 V. 4×R8i and 6×R8i, 690 V
[13] ACS880 marine type approvals and type approved drives are listed at https://new.abb.com/drives/segments/marine/marine-type-approvals.
[14] For cabinet-built drives (-07)
[15] Available only with IP20 (+P940 or +P944)
[16] For 1140A-3 and 1070A-5 (-07 nxR8i).
[17] Pending
[18] Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options. FSO-xx can also be mounted on a DIN rail by using a separate installation kit. DIN rail mounting does not consume the drive's option slots. With frames R6 to R11 it is possible to mount the FSO-xx inside the drive without using the drive’s option slots.
[19] For frame sizes R8 and R11, 380 to 500 V (-17, -37).
[20] For frame size R8, 380 to 500 V (-17,-37). As standard for R11, 380 to 690 V.
[21] Only for frame size R11.
[22] Only for frame size 1xR8i, 380 to 500 V (-17,-37).
[23] For frame size R8, 380 to 500 V (-17,-37). For R11, 380 to 690 V, please contact your local ABB.
[24] For availability and further information, please contact your local ABB office.
[25] Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options. The slot number for I/O and encoder options can be extended with FEA-03 option. Please note that functional safety and communication protocol adapters cannot be used with FEA-03.
[26] Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options.
[27] For ACS880-37LC.
[28] Common mode filter (+E208) is standard for 690 V devices.

Notes

Notes

Additional information
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

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Video playlist:
ACS880 how-to videos

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