LOW VOLTAGE AC DRIVES

ABB machinery drives

ACS180, 0.25 to 22 kW



Reliable machine operations and essential application control for machine builders in a compact footprint.
ACS180 machinery drives.

Table of contents

04–05 **ACS180 machinery drives**

06–07 **Simplify your application with reliable and cost-effective performance**

08–09 **Typical industries and applications**

10 **ACS180 drives software with versatile features**

11 **Standard interface for ACS180 machinery drives**

12 **EU Ecodesign Regulation**

13 **ABB SmartGuide – ACS180**

14 **ABB Ability™ Mobile Connect for drives**

15 **Technical data**

16 **How to select a drive**

17 **Ordering information**

18–19 **Ratings, types and voltages**

20 **Dimensions**

21 **Drive commissioning and adaptable use with your control panel**

22–23 **Commissioning, programming and customization tools**

24 **EMC – electromagnetic compatibility**

25 **Filters and chokes**

26–27 **Cooling and fuses**

28 **Circuit breakers**

29 **Resistor braking**

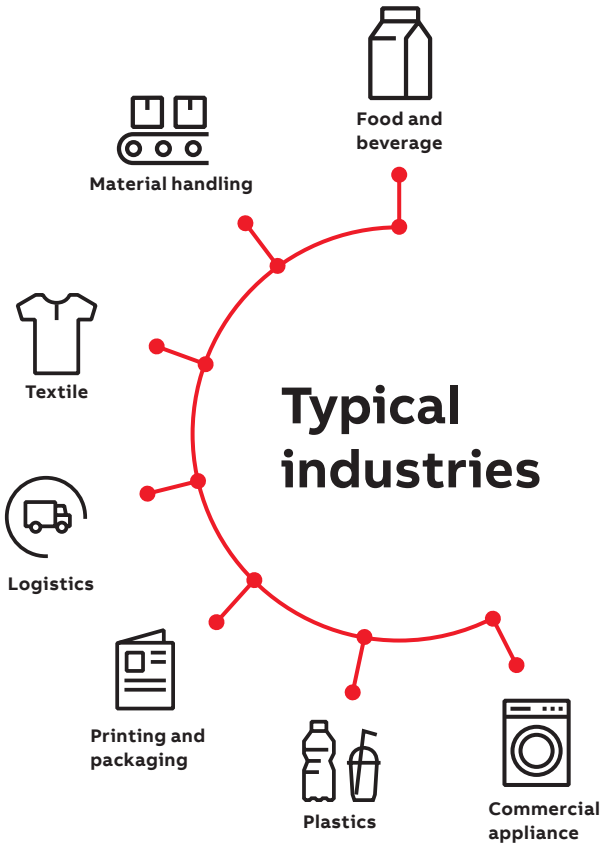
30 **ACS180 drives are compatible with the wide ABB product offering**

32–33 **Our service expertise, your advantage**

34–35 **ABB Drives Life Cycle Management**

ACS180 machinery drives
Reliable machine operations and essential application control

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



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

Optimal drive for applications
The ACS180 drive offers excellent performance and quality at its price level with all essential machinery application features embedded. Meanwhile, the built-in EMC filter and STO bring savings in cabinet size and cost. Heavy-duty use and light-duty use are rated in one drive, this will help users choose the optimal drive for each application.

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

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

Energy efficiency and Ecodesign
ACS180 is designed to run your motors based on the current demands of your processes rather than running them at full speed and reducing output using mechanical controls like throttles, dampers, or gears, and help our customers secure a more sustainable future by reducing energy consumption and CO_2 emissions.


L1 L2 L3
Loc
1501 rpm
1499.50
rpm
Back
OK
Stop
Start
ABB
ACS180
PE
T1/ U
T2/ V
T3/ W

Simplify your application with reliable and cost-effective performance

The ACS180 machinery 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.



All-compatible user interface
The ACS180 is part of the ABB all-compatible drives portfolio like ACS380, ACS480, ACS580 and ACS880 drives. All these drives have the same easy to use PC tools and a similar intuitive multilingual user interface and parameter structure making using and learning them fast and easy.



Drive-based programmability
Adaptive and sequence programming allows the customization of the drive software using sequence and function block programming. This means system costs can be reduced by replacing the need for a PLC for logic execution. This is a standard feature in the ACS180 drive, requiring no additional downloads or licenses.

Built-in EMC filter
High-frequency noise can directly affect sensitive electronic equipment and high-speed communication fieldbuses.
The ACS180-04S drive is equipped with a built-in EMC filter to reduce high-frequency emissions. The built-in EMC filter allows the drive to be used in industrial or domestic environments without the need to buy and install additional external filters.

Simple and flexible installation
The compact size of the ACS180 drive and possibility for side-by-side installation ensure optimized use of cabinet space and help save costs.
Installation and commissioning of the drive are quick and easy thanks to its intuitive graphical user interface, simple parameter structure and spring control terminals.





Designed for maximum reliability
Design features like coated circuit boards, minimized airflow through the electronics, reliable earth fault protection, and its design for a 60 °C ambient temperature make the ACS180 a safe choice for customers expecting high reliability. This is further enhanced by a full load test that is carried out on every single drive during production.

Communication
The standard Modbus RTU interface enables connectivity with an industrial automation network. The predefined Modbus macro allows your drive to connect with a PLC in a few seconds.



Remote connectivity
The drive can be accessed remotely with a Bluetooth control panel to monitor or adjust the drive's parameters, for example.



Safe Torque Off
Safe Torque Off (SIL 3, PL e) is a standard built-in feature in ACS180-04S drives.

Typical industries and applications

ACS180 drives improve process performance, increase productivity, reduce external components, and ensure machine and personnel safety.



—
01



—
02



—
03



—
04



—
05



—
06



—
07



—
08

—
01 Food and beverage
—
02 Material handling
—
03 Textile
—
04 Logistics
—
05 Printing and packaging
—
06 Plastics
—
07 Commercial appliance
—
08 Pumps and fans

Industry	Application	Customer benefits
Food and beverage 	Blowers, conveyors, fans, pumps, mixers, dryers, ovens	• Accurate control and reliable design increase productivity. • Precise speed and torque control increases production uptime even when the load varies. • Safe Torque Off (SIL 3) function ensures machine and personnel safety. • Minimized downtime with robust and reliable design.
Material handling 	Conveyors, polishing, cutting, drills	• Precise speed or torque control for high stretching accuracy and better quality of the end product. • Safe Torque Off (SIL 3) function ensures machine and personnel safety. • Soft acceleration and deceleration can be achieved by S-curve speed ramp, reducing the stress on mechanical parts. • Minimized downtime with robust and reliable design.
Textile 	Conveyors, drum washers, fans, dyeing machines, pumps	• Precise speed or torque control for high stretching accuracy and better quality of the end product. • Adjustable torque limit to prevent damage to mechanical equipment. • Minimized downtime with robust and reliable design. • Undervoltage control ensures uninterrupted production during power network disturbances.
Logistics 	Belt conveyors, roller conveyors	• Accurate and precise speed and torque control increases production uptime even when the load varies. • Adjustable torque limit to prevent damage to mechanical equipment. • Flux braking improves the dynamic performance. • Safe Torque Off (SIL 3) function ensures machine and personnel safety. • Implements machine logic with adaptive and sequence programming and reduces the number of external components.
Printing and packaging 	Compressors, presses, winders	• The robust design of the drive reduces mechanical stress on process line equipment, reducing maintenance costs and capital expenditure. • Precise speed and torque control of applications increases process uptime by optimizing motor control.
Plastics 	Auxilary devices for extrusion and injection molding machines, cooling pumps and fans	• Accurate and precise speed and torque control increases production uptime even when the load varies. • Smooth acceleration to prevent breaking the web of plastic film. • The scalable all-compatible platform allows easy process and component optimization with different drive types that share the same user interface and tools.
Commercial appliance 	Washing machines, automatic gates, rotary gate, treadmills	• Compact design for installing in commercial appliances. • Enhanced quality of end products with smooth control of the motor and process. • Adjustable torque limit to prevent damage to mechanical equipment. • Safe Torque Off (SIL 3) function ensures machine and personnel safety. • Built-in EMC filter for domestic environment.

ACS180 drives software with versatile features



One drive to control different types of motor. The ACS180 supports both induction and permanent magnet motors.

Excellent motor control performance. Thanks to its sensorless vector control, the ACS180 supports precise torque control even without encoder feedback. Furthermore, in more demanding applications, the ACS180 also offers rich functions, such as flystart, torque boost, DC injection, and slip compensation, to outstanding performance for various operating modes.

"Mini PLC" included in the drive. By using intuitive and visualized Adaptive Programming, which offers numerous logical or mathematical function blocks, the user can build their own logic to scale up and customize the drive to your application's requirements. The PC tool Drive Composer Entry, which is used to edit the Adaptive Programming, is also free.

Energy optimization function can automatically adjust the motor flux to its most efficient level: this helps reduce motor current and thus reduce power consumption and noise.

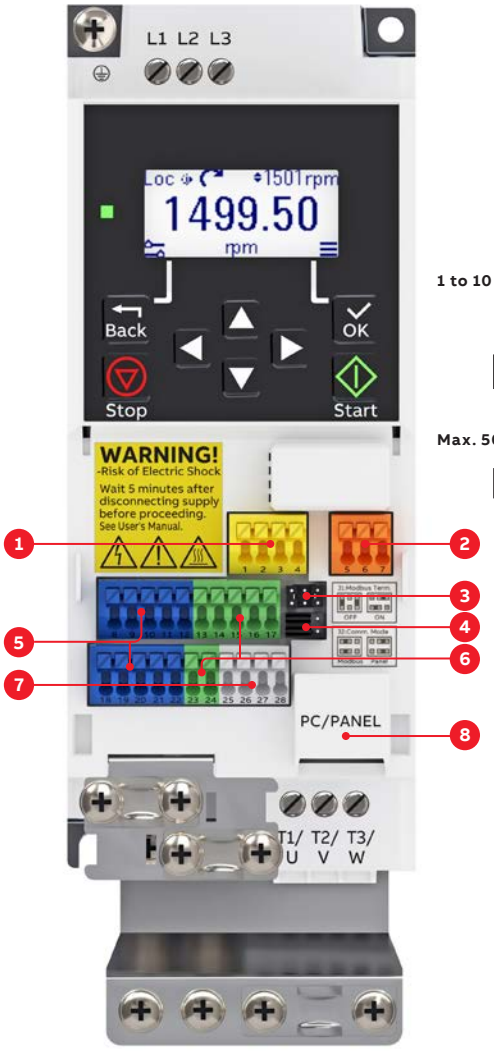
Many protective and process limit functions for protecting your machine through long-term running. The ACS180 not only offers various functions to protect the motor, such as overload, overheat, overcurrent, overvoltage, phase loss or phase-ground protections, but also has functions to protect the machine, such as limit of speed, torque or time.

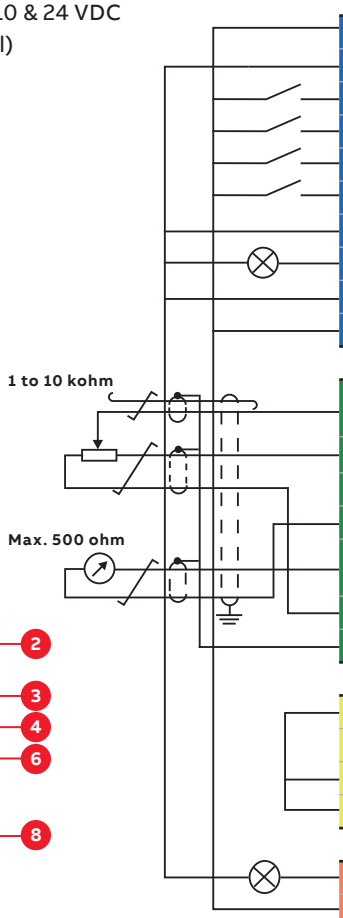
Load profile feature collects drive values, such as current and stores them in a log. This enables you to analyze and optimize the application with the help of historical data load.

Standard interface for ACS180 machinery drives

ACS180 drives offer a wide range of standard interfaces via spring terminals. The standard variant includes:

- 4 DI + 1 DO + 2 AI + 1 AO + 1 RO + STO + 10 & 24 VDC
- Embedded Modbus RTU (external panel)





1. Safe Torque Off (STO)
2. Relay output
3. Modbus termination
4. Communication mode jumper
5. Digital inputs and outputs
6. Analog inputs and outputs
7. EIA-485 Modbus RTU
8. Panel connector (external panel or adapter for PC connection)

Default I/O connections of standard variant

Terminals		Descriptions
		Digital inputs and outputs
21	24 V	Aux. voltage output +24 V DC
22	DGND	Aux. voltage output common
8	DI1	Digital input 1: Stop (0)/Start (1)
9	DI2	Digital input 2: Forward (0)/Reverse (1)
10	DI3	Digital input 3: Speed selection
11	DI4	Digital input 4: Speed selection
12	DCOM	Digital input common for all
18	DO	Digital output (running)
19	DO COM	Digital output common
20	DO SRC	Digital output auxiliary voltage
		Analog inputs and outputs
14	AI1/DI5	Analog input 1/Digital input 5: Speed reference (0...10 V)
13	AGND	Analog input circuit common
15	AI2	Analog input 2 (not used)
16	AGND	Analog input circuit common
17	AO	Analog output: Output frequency (0...20 mA)
23	10 V	Reference voltage +10 V DC
24	SCREEN	Signal cable shield (screen)
		Safe Torque Off (STO) *)
1	S+	Safe Torque Off function. Connected at the factory. Drive starts only when both circuits are closed.
2	SGND	
3	S 1	
4	S 2	
		Relay output
5	NC	No fault [Fault (-1)]
6	COM	
7	NO	
		EIA-485 Modbus RTU
25	B+	Embedded Modbus RTU (EIA-485) External panel and Modbus RTU share same port internally.
26	A-	
27	AGND	
28	SHIELD	
	Termination	
		PC/PANEL connection
PC/PANEL(RJ45)		Use standard Cat 5e or better Ethernet cable with male RJ45 connector to connect external control panel. Or use the BCBL-01 (USB to EIA-485) cable to connect the drive with PC directly. Note: This connection is not a network port, DO NOT connect it to Ethernet.

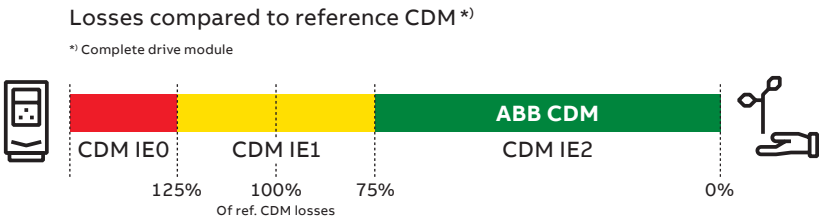
*) Only with S-variant.

ABB AC drives comply with the EU Ecodesign requirements

The Ecodesign regulation (EU) 2019/1781 is the legislative framework, that sets minimum energy efficiency requirements for low voltage induction motors and variable speed drives. AC drives and power drive systems are classified according to their power losses. From July 2021, the minimum requirement for non-regenerative AC drives in EU is IE2.

ABB's AC drives (micro and machinery, general purpose, industrial and industry-specific drives) comply with the strictest requirements of the standard for energy efficiency and are classified as IE2.

Energy efficiency classes for a Complete Drive Module (CDM)



Markings on the ABB LV 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.

ABB EcoDesign web-based tool



- Calculates absolute and relative losses and efficiency data at standard and user-defined operating points according to EU regulation 2019/1781 for complete drive module (CDM), LV motors with VSD supply, and power drive system (PDS)
- Losses and efficiency data at operating points in graphical and table format
- Printable efficiency report with possibility to customize title and additional details
- Report can be converted to PDF or CSV format and shared via email

The regulation was implemented in two steps:

Step 1: July 1, 2021

- Power range: from 0.12 to 1000 kW
- 3-phase LV AC drives with diode rectifier
- 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.

Out of scope of 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.
- Medium voltage drives, DC drives and traction drives
- Drive cabinets with already conformity assessed modules

Step 2: July 1, 2023

No changes for AC drives

For more information, see: ecodesign.drivesmotors.abb.com

ABB SmartGuide – ACS180



Being 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 or click here to access the user guide.

ABB Ability™ Mobile Connect for drives

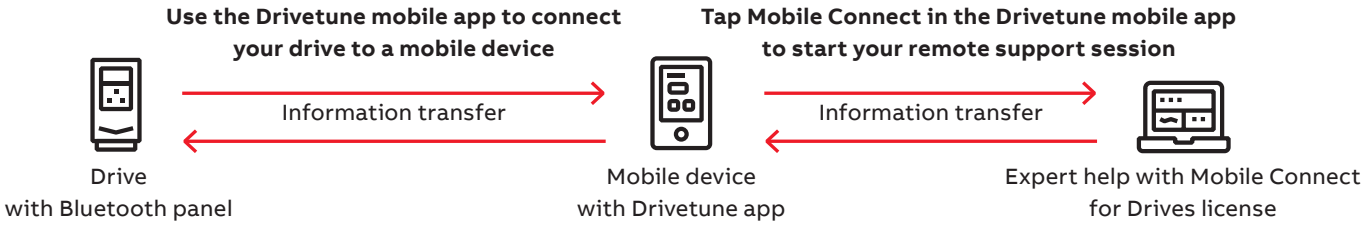
Easy access to remote support
ABB Ability™ Mobile Connect for drives is a platform for remote drive support consisting of the Mobile Connect web portal and the Drivetune mobile app.

The platform allows ABB service partners to provide remote commissioning and troubleshooting support for personnel on-site without any complex connectivity infrastructure. Chats, sharing images and backups, viewing parameters online and sending support packages are all possible, making your technical support process quick and efficient.

All that is needed is the Bluetooth control panel and a mobile device.

The platform is available for ABB partners and OEMs under a renewable subscription-based agreement.

ABB Ability™ Mobile Connect for drives support portal



Drivetune mobile app for managing drives via an intuitive interface

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**
- **Keep track of drives installed base**

Download Drivetune mobile app



Google play

Available on the App Store

Technical data

Mains connection	
Voltage and power range	1-phase, 200 to 240 V, +10%/-15% 0.25 to 3 kW 3-phase, 200 to 240 V, +10%/-15% 0.25 to 11 kW 3-phase, 380 to 480 V, +10%/-15% 0.37 to 22 kW
Supply network type	TN, TT, IT ACS180-04N-xxxx-4 does not support corner-grounded delta network
Frequency	from 47 to 63 Hz
Power factor	cosφ = 0.98
Efficiency (at nominal power)	98%
Efficiency class (IEC 61800-9-2)	IE2
Motor connection	
Voltage	0 to U_N, 3-phase
Frequency	0 to 599 Hz
Motor control	Scalar control Sensorless vector control
Switching frequency	1.5 to 12 kHz, default 4 kHz
Motor control performance	
Speed control performance, open loop	
Static accuracy	20% of motor rated slip
Dynamic accuracy	1% seconds with 100% torque step
Torque control performance	
Torque step rise time	< 10 ms, rated torque step
Non-linearity	±5% with rated torque
Braking power connection	
Brake chopper	Only on frames R2 to R4
Brake resistor	Only on frames R2 to R4
DC connection	Only on frames R2 to R4
Control and connectivity	
Analog input	2 mA or V configure by parameter AI1 can be used as DI5
Analog output	1 mA or V configure by parameter
Digital input	4 PNP or NPN
Digital output	1 Transistor output, 60mA
Relay output	1 NO+NC, 230 V, 2 A
Communication	1 x RJ45 for external control panel/PC tool Terminals for EIA-485 Modbus RTU External panel and Modbus RTU share same port internally – cannot be used together

Functional safety	
Built-in safety features (for ACS180-04S-xxxx-x)	Safe Torque Off (STO) acc. to EN/IEC61800-5-2: IEC61508 ed2: SIL 3, IEC 61511: SIL 3, IEC 62061: SIL CL 3, EN ISO 13849-1: PL e
Environmental limits	
Ambient temperature	
Operation	-10 to +50 °C at heavy duty -10 to +40 °C at light and nominal duty with derating up to 60 °C (except R0, which has max. temperature of 50 °C)
Transportation and storage	-40 to +70 °C
Cooling method	Air-cooled, dry clean air
Altitude	0 to 2,000 m (see allowed power systems in HW manual) derating above 1,000 m
Relative humidity	5 to 95%, no condensation allowed
Degree of protection	IP20 as standard
Contamination levels	No conductive dust allowed
Storage	IEC 60721-3-1, Class 1C2 (chemical gases) Class 1S2 (solid particles)
Transportation	IEC 60721-3-2, Class 2C2 (chemical gases) Class 2S2 (solid particles)
Operation	IEC 60721-3-3, Class 3C2 (chemical gases) Class 3S2 (solid particles)
Product compliance	
	CE Low Voltage Directive 2014/35/EU, EN 61800-5-1: 2007 Machinery Directive 2006/42/EC, EN 61800-5-2: 2007 EMC Directive 2014/30/EU, EN 61800-3: 2004 + A1: 2012 RoHS directive 2011/65/EU and delegated directive (EU) 2015/863 Ecodesign (EU) 2019/1781 China RoHS II GB/T 26572 UL, cUL RCM KC TÜV Nord (safety functions) UKCA Quality assurance system ISO 9001 and Environmental system ISO 14001 Waste electrical and electronic equipment directive (WEEE) 2002/96/EC
EMC according to EN 61800-3:2004 + A1:2012	
	ACS180-04S-xxxx-1: Class C2 as standard
	ACS180-04S-xxxx-4: Class C3 as standard
	ACS180-04S-xxxx-2: Class C4 as standard
	ACS180-04N-xxxx-x: Class C4 as standard

How to select a drive

How you build up your ordering code

Start by identifying your supply voltage. This indicates what rating table you should use. See pages 18 and 19.

Select the ordering code for the ACS180 machinery drive by choosing either the standard offering or without STO and EMC filter.



Ordering information

The type designation indicates the specifications and configuration of the drive.
The table shows the primary drive variants.

Sample type code: ACS180-04S-02A6-4 (I_{2n} = 2.6 A, 3-phase 400 V, with STO and C3 EMC filter)

Segment	A	B	C	D
ACS180	04	S	02A6	4

Product series
Types and construction
EMC and STO variant
Current rating
Voltage rating

Basic codes		
Segment	Option	Description
A	Types and construction	04 = Module, IP20
B	EMC and STO variant	S = Standard offering with STO and EMC filter*)
		1-phase 200 to 240 V: Class C2
		3-phase 200 to 240 V: Class C4
		3-phase 380 to 480 V: Class C3
		N = Without STO and EMC filter
C	Current rating	For example, 02A6 refers to a nominal output current of 2.6 A
D	Voltage rating	1 = 3-phase 200 to 240 V, 2 = 3-phase 200 to 240 V, 4 = 3-phase 380 to 480 V

*) For 3-phase 200 to 240 V, ACS180-04S-xxxx-2 does not have built-in EMC filter as standard, only STO.
**) Only 1-phase 200 to 240 V and 3-phase 380 to 480 V drives have N-variant available.
***) N-variant has limited global availability – please contact your local ABB.

Page 17

1
2
3

Choose the motor power and current rating from the ratings table on pages 18 and 19.

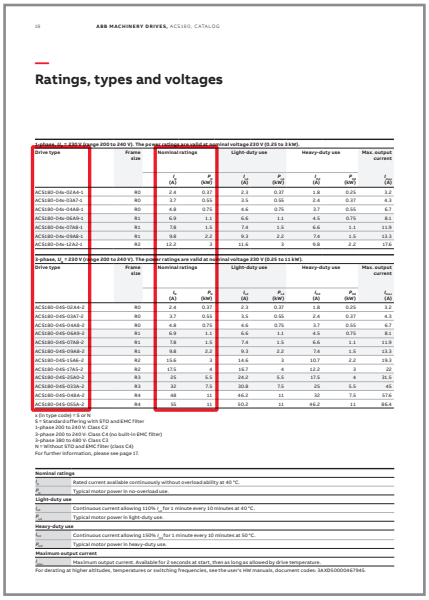
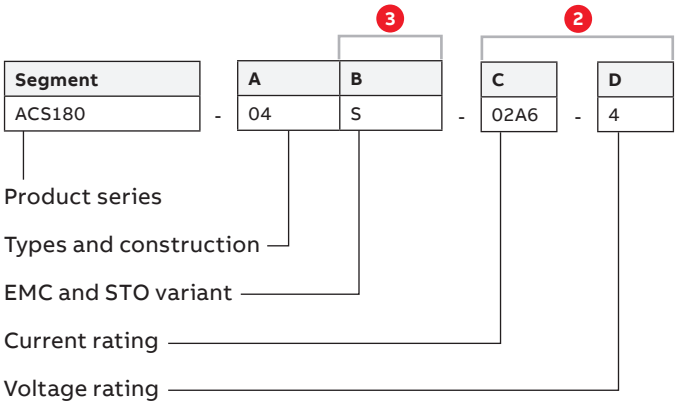


ABB MACHINERY DRIVES, ACS180, CATALOG

Ratings, types and voltages

Pages 18 and 19



Ordering information

The type designation indicates the specifications and configuration of the drive.
The table shows the primary drive variants.

Sample type code: ACS180-04S-02A6-4 (I_N = 2.6 A, 3-phase 400 V, with STO and C3 EMC filter)

Segment		A	B		C		D
ACS180	-	04	S	-	02A6	-	4

Product series
Types and construction
EMC and STO variant
Current rating
Voltage rating

Basic codes

Segment	Option	Description
A	Types and construction	04 = Module, IP20
B	EMC and STO variant	S = Standard offering with STO and EMC filter*) 1-phase 200 to 240 V: Class C2 3-phase 200 to 240 V: Class C4 3-phase 380 to 480 V: Class C3 N**) ***) = Without STO and EMC filter
C	Current rating	For example, 02A6 refers to a nominal output current of 2.6 A
D	Voltage rating	1 = 1-phase 200 to 240 V, 2 = 3-phase 200 to 240 V, 4 = 3-phase 380 to 480 V

*) For 3-phase 200 to 240 V, ACS180-04S-xxxx-2 does not have built-in EMC filter as standard, only STO.
**) Only 1-phase 200 to 240 V and 3-phase 380 to 480 V drives have N-variant available.
***) N-variant has limited global availability – please contact your local ABB.



Ratings, types and voltages

1-phase, U_N = 230 V (range 200 to 240 V). The power ratings are valid at nominal voltage 230 V (0.25 to 3 kW).

Drive type	Frame size	Nominal ratings		Light-duty use		Heavy-duty use		Max. output current
		I_N (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	I_{max} (A)
ACS180-04x-02A4-1	R0	2.4	0.37	2.3	0.37	1.8	0.25	3.2
ACS180-04x-03A7-1	R0	3.7	0.55	3.5	0.55	2.4	0.37	4.3
ACS180-04x-04A8-1	R0	4.8	0.75	4.6	0.75	3.7	0.55	6.7
ACS180-04x-06A9-1	R1	6.9	1.1	6.6	1.1	4.5	0.75	8.1
ACS180-04x-07A8-1	R1	7.8	1.5	7.4	1.5	6.6	1.1	11.9
ACS180-04x-09A8-1	R1	9.8	2.2	9.3	2.2	7.4	1.5	13.3
ACS180-04x-12A2-1	R2	12.2	3	11.6	3	9.8	2.2	17.6

3-phase, U_N = 230 V (range 200 to 240 V). The power ratings are valid at nominal voltage 230 V (0.25 to 11 kW).

Drive type	Frame size	Nominal ratings		Light-duty use		Heavy-duty use		Max. output current
		I_N (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	I_{max} (A)
ACS180-04S-02A4-2	R0	2.4	0.37	2.3	0.37	1.8	0.25	3.2
ACS180-04S-03A7-2	R0	3.7	0.55	3.5	0.55	2.4	0.37	4.3
ACS180-04S-04A8-2	R0	4.8	0.75	4.6	0.75	3.7	0.55	6.7
ACS180-04S-06A9-2	R1	6.9	1.1	6.6	1.1	4.5	0.75	8.1
ACS180-04S-07A8-2	R1	7.8	1.5	7.4	1.5	6.6	1.1	11.9
ACS180-04S-09A8-2	R1	9.8	2.2	9.3	2.2	7.4	1.5	13.3
ACS180-04S-15A6-2	R2	15.6	3	14.6	3	10.7	2.2	19.3
ACS180-04S-17A5-2	R2	17.5	4	16.7	4	12.2	3	22
ACS180-04S-25A0-2	R3	25	5.5	24.2	5.5	17.5	4	31.5
ACS180-04S-033A-2	R3	32	7.5	30.8	7.5	25	5.5	45
ACS180-04S-048A-2	R4	48	11	46.2	11	32	7.5	57.6
ACS180-04S-055A-2	R4	55	11	50.2	11	46.2	11	86.4

x (in type code) = S or N
S = Standard offering with STO and EMC filter
1-phase 200 to 240 V: Class C2
3-phase 200 to 240 V: Class C4 (no built-in EMC filter)
3-phase 380 to 480 V: Class C3
N = Without STO and EMC filter (class C4)
For further information, please see page 17.

Nominal ratings	
I_N	Rated current available continuously without overload ability at 40 °C.
P_N	Typical motor power in no-overload use.
Light-duty use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 10 minutes at 40 °C.
P_{Ld}	Typical motor power in light-duty use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 10 minutes at 50 °C.
P_{Hd}	Typical motor power in heavy-duty use.
Maximum output current	
I_{max}	Maximum output current. Available for 2 seconds at start, then as long as allowed by drive temperature.

For derating at higher altitudes, temperatures or switching frequencies, see the user's HW manuals, document codes: 3AXD50000467945.

3-phase, U_N = 400 V (range 380 to 480 V). The power ratings are valid at nominal voltage 400 V (0.37 to 22 kW).

Drive type	Frame size	Nominal ratings		Light-duty use		Heavy-duty use		Max. output current
		I_N (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	I_{max} (A)
ACS180-04x-01A8-4	R0	1.8	0.55	1.7	0.55	1.2	0.37	2.2
ACS180-04x-02A6-4	R0	2.6	0.75	2.5	0.75	1.8	0.55	3.2
ACS180-04x-03A3-4	R0	3.3	1.1	3.1	1.1	2.4	0.75	4.3
ACS180-04x-04A0-4	R1	4	1.5	3.8	1.5	3.3	1.1	5.9
ACS180-04x-05A6-4	R1	5.6	2.2	5.3	2.2	4	1.5	7.2
ACS180-04x-07A2-4	R1	7.2	3	6.8	3	5.6	2.2	10.1
ACS180-04x-09A4-4	R1	9.4	4	8.9	4	7.2	3	13
ACS180-04x-12A6-4	R2	12.6	5.5	12	5.5	9.4	4	16.9
ACS180-04x-17A0-4	R2	17	7.5	16.2	7.5	12.6	5.5	22.7
ACS180-04x-25A0-4	R3	25	11	23.8	11	17	7.5	30.6
ACS180-04x-033A-4	R3	32	15	30.5	15	25	11	45
ACS180-04x-038A-4	R4	38	18.5	36	18.5	32	15	57.6
ACS180-04x-045A-4	R4	45	22	42	22	38	18.5	68.4
ACS180-04x-050A-4	R4	50	22	48	22	45	22	81

x (in type code) = S or N
S = Standard offering with STO and EMC filter
1-phase 200 to 240 V: Class C2
3-phase 200 to 240 V: Class C4 (no built-in EMC filter)
3-phase 380 to 480 V: Class C3
N = Without STO and EMC filter (class C4)
For further information, please see page 17.

Nominal ratings	
I_N	Rated current available continuously without overload ability at 40 °C.
P_N	Typical motor power in no-overload use.
Light-duty use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 10 minutes at 40 °C.
P_{Ld}	Typical motor power in light-duty use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 10 minutes at 50 °C.
P_{Hd}	Typical motor power in heavy-duty use.
Maximum output current	
I_{max}	Maximum output current. Available for 2 seconds at start, then as long as allowed by drive temperature.

For derating at higher altitudes, temperatures or switching frequencies, see the user's HW manuals, document codes: 3AXD50000467945.

Dimensions

ACS180 IP20					
Frame size	**Height 1 (mm)**	**Height 2 (mm)**	**Width (mm)**	**Depth (mm)**	**Weight (kg)**
R0	174	209	70	143	0.9
R1	190	220	70	143	1.3
R2	202	230	120	143	1.9
R3	205	241	170	174	3.3
R4	205	240	260	178	5.3

Height 1: Total height of the drive without grounding plate.
Height 2: Total height of the drive with grounding plate





Drive commissioning and adaptable use with your control panel

The ACS180 drive has an integrated control panel with a display and control keys. External control panels are also available for installation on a cabinet door or for operation via a Bluetooth connection.



Control panel as standard
Almost anyone can set up and commission the machinery drive using the available control panels. The ACS180 comes with the integrated icon-based control panel as standard. You do not need to know any drive parameters, because the control panel helps you to set up the essential settings quickly and get the drive into action. In addition, the ACS180 supports the assistant control panel (AP-I, AP-S or AP-W).



Assistant control panel, ACS-AP-I *)
The optional Assistant control has a graphical multilingual display. There is no need to know any drive parameters, because the control panel helps you set up the essential settings quickly and get the drive into action without hassle. The panel can be used with any products in the ABB all-compatible product portfolio.



Bluetooth control panel, ACS-AP-W *)
The optional Bluetooth panel enables connection with the Drivetune mobile app. The app is available for free from Google Play and the Apple App Store. Together with the Drivetune app and the Bluetooth panel, users can commission and monitor the drive remotely, for example.



Basic control panel, ACS-BP-S
If there is a need to install a basic panel in the cabinet door, the ACS-BP-S is the right choice. The icon-based control panel supports users with basic operation, settings and fault tracking when nothing extra is needed.



Control panel mounting platform, DPMP-01
This mounting platform is for flush mountings. The panel mounting platform does not include the control panel.



Control panel mounting platform, DPMP-02
This mounting platform is for surface mounting. The panel mounting platform does not include the control panel.



Control panel mounting platform, DPMP-04
Enables control panel outdoor mounting thanks to IP66 protection class, UV resistance and IK07 impact protection rating.

*) Also compatible with the following ABB all-compatible drives: ACS380, ACS480, ACS580, and ACS880 drives.

Control panel options

Ordering code	Description	Control panel
3AUA0000088311	Assistant control panel	ACS-AP-I
3AUA0000064884	Assistant control panel	ACS-AP-S
3AXD0000025965	Assistant control panel with Bluetooth interface	ACS-AP-W
3AXD50000028828	Basic control panel	ACS-BP-S
3AUA0000108878	Control panel mounting platform (flush-mounted)	DPMP-01
3AXD50000009374	Control panel mounting platform (surface-mounted)	DPMP-02
3AXD50000217717	Control panel mounting platform (outdoor installation)	DPMP-04

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.

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

Drive Composer could be used to set up adaptive programming. Adaptive programming is embedded inside the drive, is especially handy when there is a need to distribute some of the machine's control logic to the drive, it brings energy savings when the drive is adjusted to control the application optimally. The drive also offers sequence programming capabilities. Adaptive programming makes it possible to enhance the existing application control program to precisely fit users' application needs. The program is also handy for ensuring that the drive's electrical design is connected as it should be with working drive signals.

Drive Composer	Entry level (free)	Pro level
	Basic functionality	Entry-level features
	Multi-language UI	Networked drives
	Parameter setting	Control diagrams
	Backup-restore	Data logger(s)
	Adaptive programming	Graphical safety setup
	Simple monitoring	Advanced monitoring
	Single-point connection	Multiple-point connection
	Connection via USB	Connection via USB/Ethernet
	–	Control diagrams
	–	Datalogger
	–	Graphical safety setup

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

Mini USB connection on the panel
When using the Assistant control panel, the Drive Composer tool is connected to the drive using the mini USB connection on the panel.

Mini USB connection on the panel	
	It connects the Drive Composer tool and the drive.

RJ45 connection at the bottom of ACS180
Through the RJ45 connection at the bottom of the drive, use male RJ-45 connector, cable type Cat 5e or better, the other side connects to the RJ45 behind the control panel.

RJ45 connection	
	It connects drive and control panel.

Safe configuration for unpowered drives
The CCA-01 cold configuration adapter provides a serial communication interface for unpowered ACS180 R2 to R4 drives. With the adapter, safety isolation of both serial communication and control board power supply is possible. The power supply is taken from a PC USB port.

Cold configurator

Users can download the software and parameters to drives without powering ACS180 R2 to R4 drive.



MRP code	Description	Type designation
3AXD50000019865	Cold configurator adapter, packed kit	CCA-01

BCBL-01 cable
Using the BCBL-01 cable, the PC can be connected directly to the RJ-45 panel port on the bottom of the ACS180 drive.

BCBL-01

It connects PC and RJ-45 panel port.



MRP code	Description	Type designation
3AXD50000032449	PC cable, USB to RJ45	BCBL-01

DIN rail mounting kit
For ACS180 frames R0 to R2, it is possible to install the drive to a standard 35 mm DIN rail with an optional kit. ACS180 R3/R4 support standard DIN rail installation. DIN rail installation passes ISTA standard road transport simulation tests, it ensures that the ACS180 installed in the electrical cabinet is stable and reliable during transportation.

DIN rail mounting kit

It connects the drive and DIN rail.



MRP code	Description	Type designation
3AXD50000900183	DIN rail mounting kit for R0 or R1 (5 sets per each package)	BDRK-01
3AXD50000900510	DIN rail mounting kit for R2 (5 sets per each package)	BDRK-02

EMC – electromagnetic compatibility

ACS180-04S machinery drives are equipped with a built-in filter (C2 for 200 V and C3 for 400 V) to reduce high-frequency emissions.

EMC standards

The EMC product standard (EN 61800-3) covers the specific EMC requirements stated for drives (tested with motor and cable) within the EU. EMC standards such as EN 55011 or EN 61000-6-3/4 are applicable to industrial and domestic equipment and systems that include components inside the drive. Drive units complying with the requirements of EN 61800-3 are compliant with comparable categories in EN 55011 and EN 61000-6-3/4, but not necessarily vice versa.

EN 55011 and EN 61000-6-3/4 do not specify cable length or require a motor to be connected as a load. The emission limits are comparable to EMC standards according to the table below.

Domestic environments versus public low voltage networks

The first 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 second environment includes all establishments directly connected to public low voltage power supply networks.

Comparison of EMC standards

EMC according to 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
1st environment, unrestricted distribution	Category C1	Group 1, Class B	Not applicable	Applicable
1st environment, restricted distribution	Category C2	Group 1, Class A	Applicable	Not applicable
2nd environment, unrestricted distribution	Category C3	Group 2, Class A	Not applicable	Not applicable
2nd environment, restricted distribution	Category C4	Not applicable	Not applicable	Not applicable

EMC compliance and maximum motor cable length

Voltage	Drive type	Frame size	EMC category (EN 61800-3), max. cable length with internal filter			EMC category (EN 61800-3), max. cable length with external filters		
			C1	C2	C3	C1	C2	C3
1-phase 230 V	ACS180-04S-xxxx-1	R0	–	5 m	10 m	10 m	30 m	–
		R1						
		R2						
3-phase 230 V	ACS180-04S-xxxx-2	R0	–	–	–	–	30 m	30 m
		R1						
		R2						
		R3	–	–	–	–	20 m	20 m
		R4						
3-phase 400 V	ACS180-04S-xxxx-4	R0	–	–	10 m	10 m	30 m	–
		R1						
		R2						
		R3	–	–	30 m	40 m	40 m	40 m
		R4				30 m	30 m	30 m

Built-in EMC filter: C2 with ACS180-04S-xxxx-1, C3 with ACS180-04S-xxxx-4.
ACS180-04S-xxxx-2 and ACS180-04N-xxxx-x: Class C4.

Filters and chokes

If it is necessary to optimize the line side harmonics, an external input choke can be used together with the ACS180.

It is advisable to use a mains choke if the short-circuit capacity of the network at the drive terminals is higher than specified in the table.

1-phase U_N = 230 V (range 200 to 240 V)			
Drive type	**C1 filter ABB type / Schaffner type**	**Input choke, max. ambient temp. 40 °C**	**du/dt filter type, max. ambient temp. 40 °C**
ACS180-04x-02A4-1	RFI-12/FS 21754-16.1-07	CHK-A1	ACS-CHK-B3
ACS180-04x-03A7-1	RFI-12/FS 21754-16.1-07	CHK-B1	ACS-CHK-B3
ACS180-04x-04A8-1	RFI-12/FS 21754-16.1-07	CHK-B1	ACS-CHK-B3
ACS180-04x-06A9-1	RFI-12/FS 21754-16.1-07	CHK-C1	ACS-CHK-C3
ACS180-04x-07A8-1	RFI-12/FS 21754-16.1-07	CHK-C1	ACS-CHK-C3
ACS180-04x-09A8-1	RFI-131/FS35142-20-07-1	CHK-D1	ACS-CHK-C3
ACS180-04x-12A2-1	RFI-141/FS35142-24-07	CHK-D1	ACS-CHK-C3

3-phase U_N = 230 V (range 200 to 240 V)			
Drive type	**C1 filter ABB type / Schaffner type**	**Input choke, max. ambient temp. 40 °C**	**du/dt filter type, max. ambient temp. 40 °C**
ACS180-04S-02A4-2	RFI-311/FS43566-16-44	CHK-01	ACS-CHK-B3
ACS180-04S-03A7-2	RFI-311/FS43566-16-44	CHK-01	ACS-CHK-B3
ACS180-04S-04A8-2	RFI-311/FS43566-16-44	CHK-02	ACS-CHK-B3
ACS180-04S-06A9-2	RFI-311/FS43566-16-44	CHK-03	ACS-CHK-B3
ACS180-04S-07A8-2	RFI-311/FS43566-16-44	CHK-03	ACS-CHK-C3
ACS180-04S-09A8-2	RFI-311/FS43566-16-44	CHK-04	ACS-CHK-C3
ACS180-04S-15A6-2	RFI-321/FS43566-30-33	CHK-04	NOCH0016-6x
ACS180-04S-17A5-2	RFI-321/FS43566-30-33	CHK-04	NOCH0016-6x
ACS180-04S-25A0-2	RFI-33/FN 3258-30-33	CHK-05	NOCH0030-6x
ACS180-04S-033A-2	RFI-34/FN 3258-100-35	CHK-06	NOCH0030-6x
ACS180-04S-048A-2	RFI-34/FN 3258-100-35	CHK-06	NOCH0070-6x
ACS180-04S-055A-2	RFI-34/FN 3258-100-35	CHK-07	NOCH0070-6x

3-phase U_N = 400 V (range 380 to 400 V)			
Drive type	**C1 filter ABB type / Schaffner type**	**Input choke, max. ambient temp. 40 °C**	**du/dt filter type, max. ambient temp. 40 °C**
ACS180-04x-01A8-4	RFI-311/FS 43566-16-44	CHK-01	ACS-CHK-B3
ACS180-04x-02A6-4	RFI-311/FS 43566-16-44	CHK-01	ACS-CHK-B3
ACS180-04x-03A3-4	RFI-311/FS 43566-16-44	CHK-01	ACS-CHK-B3
ACS180-04x-04A0-4	RFI-311/FS 43566-16-44	CHK-02	ACS-CHK-C3
ACS180-04x-05A6-4	RFI-311/FS 43566-16-44	CHK-02	ACS-CHK-C3
ACS180-04x-07A2-4	RFI-311/FS 43566-16-44	CHK-02	NOCH0016-6x
ACS180-04x-09A4-4	RFI-311/FS 43566-16-44	CHK-03	NOCH0016-6x
ACS180-04x-12A6-4	RFI-321/FS 43566-30-33	CHK-03	NOCH0016-6x
ACS180-04x-17A0-4	RFI-321/FS 43566-30-33	CHK-04	NOCH0016-6x
ACS180-04x-25A0-4	RFI-33/FN 3258-30-33	CHK-04	NOCH0030-6x
ACS180-04x-033A-4	RFI-34/FN 3258-100-35	CHK-05	NOCH0030-6x
ACS180-04x-038A-4	RFI-34/FN 3258-100-35	CHK-06	NOCH0070-6x
ACS180-04x-045A-4	RFI-34/FN 3258-100-35	CHK-06	NOCH0070-6x
ACS180-04x-050A-4	RFI-34/FN 3258-100-35	CHK-07	NOCH0070-6x

Cooling and fuses

Cooling

ACS180 drives are fitted with cooling air fans from frame size R1. The cooling air must be free of corrosive materials and must not exceed the maximum ambient temperature of 50 °C (60 °C with derating).

Fuses

Standard fuses can be used with the ACS180. For input fuses, see the table below. Manual motor protectors can also be used. See hardware manual for details.

Cooling airflow and recommended input protection fuses

1-phase U_N = 230 V (range 200 to 240 V)

Drive type	Frame size	Heat dissipation	Airflow	Max. noise level	IEC fuses		IEC fuses		UL fuses	
		(W)	(m³/h)	(dBA)	(A)	Fuse type	(A)	Fuse type	(A)	Fuse type
ACS180-04x-02A4-1	R0	26	–*)	–**)	10	gG	32	gR	6	UL class T
ACS180-04x-03A7-1	R0	42	–*)	–**)	16	gG	32	gR	10	UL class T
ACS180-04x-04A8-1	R0	48	–*)	–**)	16	gG	40	gR	15	UL class T
ACS180-04x-06A9-1	R1	64	27	51.8	20	gG	50	gR	20	UL class T
ACS180-04x-07A8-1	R1	69	27	51.8	25	gG	50	gR	25	UL class T
ACS180-04x-09A8-1	R1	84	27	51.8	40	gG	50	gR	35	UL class T
ACS180-04x-12A2-1	R2	141	130	62	40	gG	63	gR	35	UL class T

Cooling airflow and recommended input protection fuses

3-phase U_N = 230 V (range 200 to 240 V)

Drive type	Frame size	Heat dissipation	Airflow	Max. noise level	IEC fuses		IEC fuses		UL fuses	
		(W)	(m³/h)	(dBA)	(A)	Fuse type	(A)	Fuse type	(A)	Fuse type
ACS180-04S-02A4-2	R0	23	–*)	–**)	6	gG	25	gR	6	UL class T
ACS180-04S-03A7-2	R0	37	–*)	–**)	8	gG	32	gR	10	UL class T
ACS180-04S-04A8-2	R0	44	–*)	–**)	16	gG	32	gR	10	UL class T
ACS180-04S-06A9-2	R1	58	27	51.8	16	gG	50	gR	15	UL class T
ACS180-04S-07A8-2	R1	63	27	51.8	20	gG	50	gR	20	UL class T
ACS180-04S-09A8-2	R1	76	27	51.8	25	gG	50	gR	20	UL class T
ACS180-04S-15A6-2	R2	168	130	62	32	gG	50	gR	30	UL class T
ACS180-04S-17A5-2	R2	198	130	62	32	gG	50	gR	35	UL class T
ACS180-04S-25A0-2	R3	400	128	66	50	gG	80	gR	40	UL class T
ACS180-04S-033A-2	R3	407	128	66	63	gG	100	gR	50	UL class T
ACS180-04S-048A-2	R4	586	150	69	100	gG	160	gR	70	UL class T
ACS180-04S-055A-2	R4	702	150	69	100	gG	160	gR	80	UL class T

*) Frame size R0 with free convection cooling.
**) Frame size R0 is noise-free.

Cooling airflow and recommended input protection fuses

3-phase U_N = 400 V (range 380 to 480 V)

Drive type	Frame size	Heat dissipation	Airflow	Max. noise level	IEC fuses		IEC fuses		UL fuses	
		(W)	(m³/h)	(dBA)	(A)	Fuse type	(A)	Fuse type	(A)	Fuse type
ACS180-04x-01A8-4	R0	22	–*)	–**)	4	gG	20	gR	6	UL class T
ACS180-04x-02A6-4	R0	29	–*)	–**)	6	gG	20	gR	6	UL class T
ACS180-04x-03A3-4	R0	38	–*)	–**)	10	gG	20	gR	10	UL class T
ACS180-04x-04A0-4	R1	46	36.29	50.9	10	gG	25	gR	10	UL class T
ACS180-04x-05A6-4	R1	69	36.29	50.9	16	gG	25	gR	20	UL class T
ACS180-04x-07A2-4	R1	86	36.29	50.9	20	gG	32	gR	20	UL class T
ACS180-04x-09A4-4	R1	119	36.29	50.9	25	gG	32	gR	25	UL class T
ACS180-04x-12A6-4	R2	157	130.44	62	32	gG	50	gR	30	UL class T
ACS180-04x-17A0-4	R2	224	130.44	62	40	gG	50	gR	35	UL class T
ACS180-04x-25A0-4	R3	393	128	66	50	gG	80	gR	40	UL class T
ACS180-04x-033A-4	R3	551	128	66	63	gG	100	gR	60	UL class T
ACS180-04x-038A-4	R4	504	150	69	80	gG	125	gR	70	UL class T
ACS180-04x-045A-4	R4	587	150	69	100	gG	160	gR	70	UL class T
ACS180-04x-050A-4	R4	679	150	69	100	gG	160	gR	70	UL class T

*) Frame size R0 with free convection cooling.
**) Frame size R0 is noise-free.

Circuit breakers

The miniature circuit breakers listed below are tested and approved for use with ACS180 drives. Other circuit breakers can also be used with the drive if they provide the same electrical characteristics.

Circuit breakers			
1-phase U_N = 230 V (range 200 to 240 V)			
Drive type	**Frame size**	**ABB miniature circuit breaker Type**	**kA*)**
ACS180-04x-02A4-1	R0	S 201P-B10NA	5
ACS180-04x-03A7-1	R0	S 201P-B10NA	5
ACS180-04x-04A8-1	R0	S 201P-B16NA	5
ACS180-04x-06A9-1	R1	S 201P-B20NA	5
ACS180-04x-07A8-1	R1	S 201P-B25NA	5
ACS180-04x-09A8-1	R1	S 201P-B32NA	5
ACS180-04x-12A2-1	R2	S 201P-B40NA	5
3-phase U_N = 230 V (range 200 to 240 V)			
ACS180-04S-02A4-2	R0	S 203P-Z 6 NA	5
ACS180-04S-03A7-2	R0	S 203P-Z 8 NA	5
ACS180-04S-04A8-2	R0	S 203P-Z 10 NA	5
ACS180-04S-06A9-2	R1	S 203P-Z 16 NA	5
ACS180-04S-07A8-2	R1	S 203P-Z 20NA	5
ACS180-04S-09A8-2	R1	S 203P-Z 20NA	5
ACS180-04S-15A6-2	R2	S 203P-Z 32 NA	5
ACS180-04S-17A5-2	R2	S 203P-Z 32 NA	5
ACS180-04S-25A0-2	R3	S 203P-Z 50 NA	5
ACS180-04S-033A-2	R3	S 203P-Z 63 NA	5
ACS180-04S-048A-2	R4	Contact ABB	5
ACS180-04S-055A-2	R4	Contact ABB	5
3-phase U_N = 400 V (range 380 to 480 V)			
ACS180-04x-01A8-4	R0	S 203P-B6	5
ACS180-04x-02A6-4	R0	S 203P-B6	5
ACS180-04x-03A3-4	R0	S 203P-B6	5
ACS180-04x-04A0-4	R1	S 203P-B8	5
ACS180-04x-05A6-4	R1	S 203P-B10	5
ACS180-04x-07A2-4	R1	S 203P-B16	5
ACS180-04x-09A4-4	R1	S 203P-B16	5
ACS180-04x-12A6-4	R2	S 203P-B25	5
ACS180-04x-17A0-4	R2	S 203P-B40	5
ACS180-04x-25A0-4	R3	S203P-B50	5
ACS180-04x-033A-4	R3	S203P-B63	5
ACS180-04x-038A-4	R4	S803S-B80	5
ACS180-04x-045A-4	R4	S803-B100	5
ACS180-04x-050A-4	R4	S803-B100	5

*) Maximum allowed rated conditional short-circuit current (IEC 61800-5-1) of the electrical power network to use with this type of miniature circuit breaker.

Resistor braking

Brake chopper
The brake chopper is standard for the ACS180 R2 and above frame size. It not only controls braking, but also supervises system status and detects failures such as brake resistor and resistor cable short-circuits, chopper short-circuit, and calculated resistor over-temperature. See the tables for internal brake chopper specifications for each drive type.
The ACS180 frame R0 and R1 do not have internal braking chopper nor the DC connection.

Brake resistor
The brake resistors are separately available for the ACS180. Resistors other than the standard option resistors may be used, provided that the specified resistance value is within the specified limits and that the heat dissipation capacity of the resistor is sufficient for the drive application (see hardware manual). No separate fuses in the brake circuit are required if the conditions for the mains cable, for example, are protected with fuses and no mains cable/fuse overrating occurs.

1-phase 230 V						
Drive type	**Frame size**	**Internal brake chopper**				**Example brake resistor**
		R_{min} (ohm)	**R_{max} (ohm)**	**P_{BRcont} (kW)**	**P_{BRmax} (kW)**	**Danothem type**
ACS180-04x-xxxx-1	R0-R1	–	–	–	–	Not support
ACS180-04x-12A2-1	R2	19.5	47.1	2.2	3.3	CBR-V 560 D HT 406 39R UL
3-phase 230 V						
ACS180-04S-xxxx-2	R0-R1	–	–	–	–	Not support
ACS180-04S-15A6-2	R2	19.5	51.9	2.2	3.3	CBR-V 560 D HT 406 39R UL
ACS180-04S-17A5-2	R2	15.6	38.5	3	4.5	CBT-H 560 D HT 406 19R
ACS180-04S-25A0-2	R3	14	28	4	6	CBT-H 560 D HT 406 19R
ACS180-04S-033A-2	R3	10	20	5.5	8.3	CBT-H 560 D HT 406 19R
ACS180-04S-048A-2	R4	3	14	7.5	11.3	CBT-V 760 G HT 282 8R
ACS180-04S-055A-2	R4	3	10	11	16.5	CBT-V 760 G HT 282 8R
3-phase 400 V						
ACS180-04x-xxxx-4	R0-R1	–	–	–	–	Not support
ACS180-04x-12A6-4	R2	31.6	75.7	4	6	CBR-V 330 D T 406 78R UL
ACS180-04x-17A0-4	R2	31.6	54.4	5.5	8.3	CBR-V 560 D HT 406 39R UL
ACS180-04x-25A0-4	R3	37	49	7.5	11.3	CBR-V 560 D HT 406 39R UL
ACS180-04x-033A-4	R3	24	33	11	16.5	CBT-H 560 D HT 406 19R
ACS180-04x-038A-4	R4	6	23.7	15	22.5	CBT-H 560 D HT 406 19R
ACS180-04x-045A-4	R4	6	19.7	18.5	27.8	CBT-H 760 D HT 406 16R
ACS180-04x-050A-4	R4	6	19.7	22	33	CBT-H 760 D HT 406 16R

R_{min} = The minimum permitted resistance value of the brake resistor
R_{max} = The maximum resistance value of the brake resistor that can provide P_{BRcont}
P_{BRcont} = The continuous braking capacity of the drive
P_{BRmax} = The maximum braking capacity of the drive, when the length of the braking pulse is at most 1 minute for each 10 minutes (P_{BRcont} × 1.5). The maximum braking capacity must be more than the desired braking power.

Example brake resistor → Check the allowed braking cycle from the resistor data sheet.
Please see the ACS180 hardware manual for the selection guidelines.

ACS180 drives are compatible with the wide ABB product offering



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



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, and everything in between.



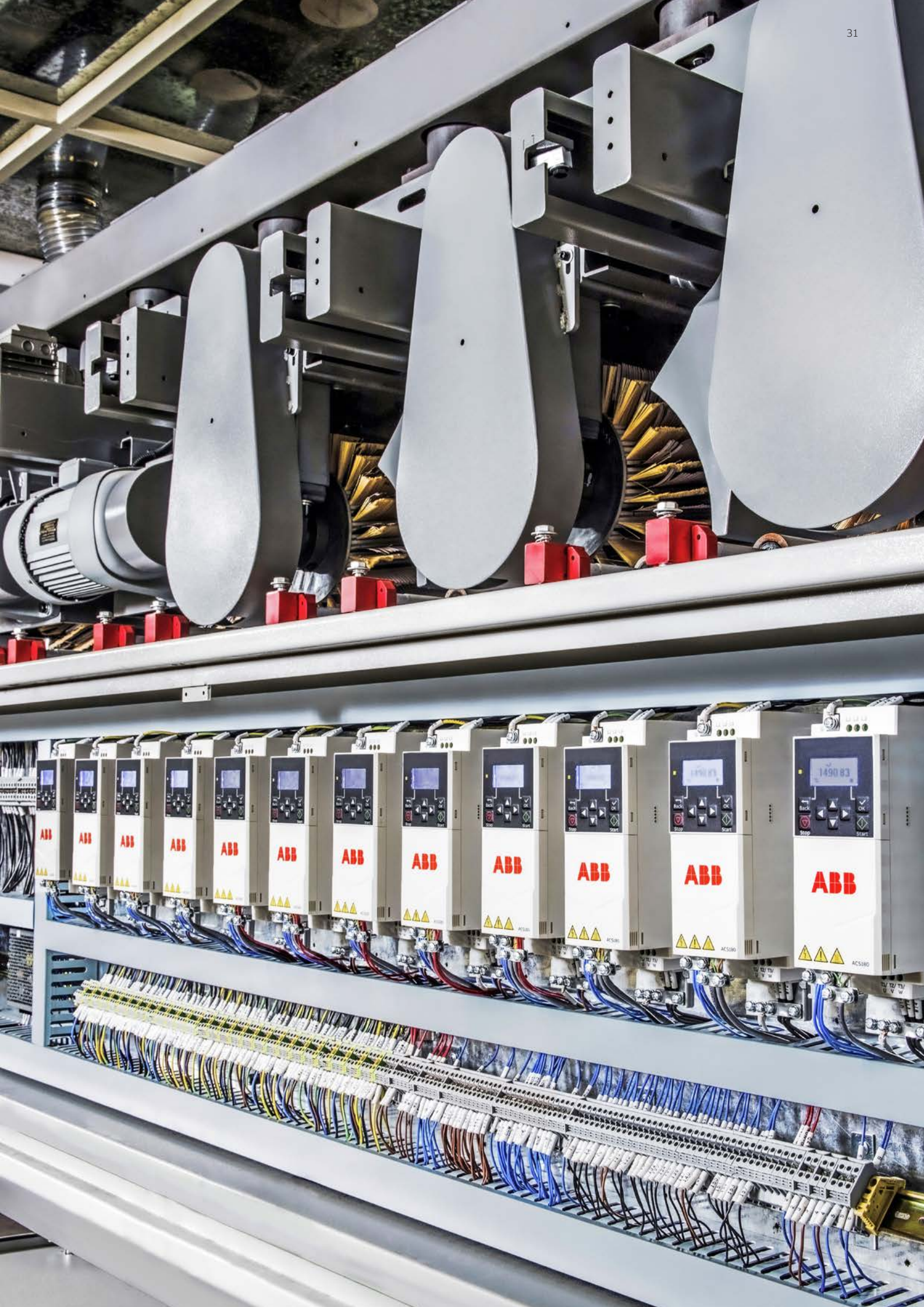
AC motors
ABB's low voltage AC motors are designed to save energy, reduce operating costs and minimize unscheduled downtime. General performance motors ensure convenience, while process performance motors provide a broad set of motors for the process industries and heavy-duty applications.



Safety products
ABB safety products are helping machine builders to create production-friendly and safe work environments for operators. We deliver machine safety solutions for single machines or entire production lines. Our long experience of helping customers making solutions for demanding environments has made us experts in combining production demands with safety demands for production-friendly solutions.



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, providing all the relevant information from production plants and machines at a single touch.


ABB
ACS180

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.

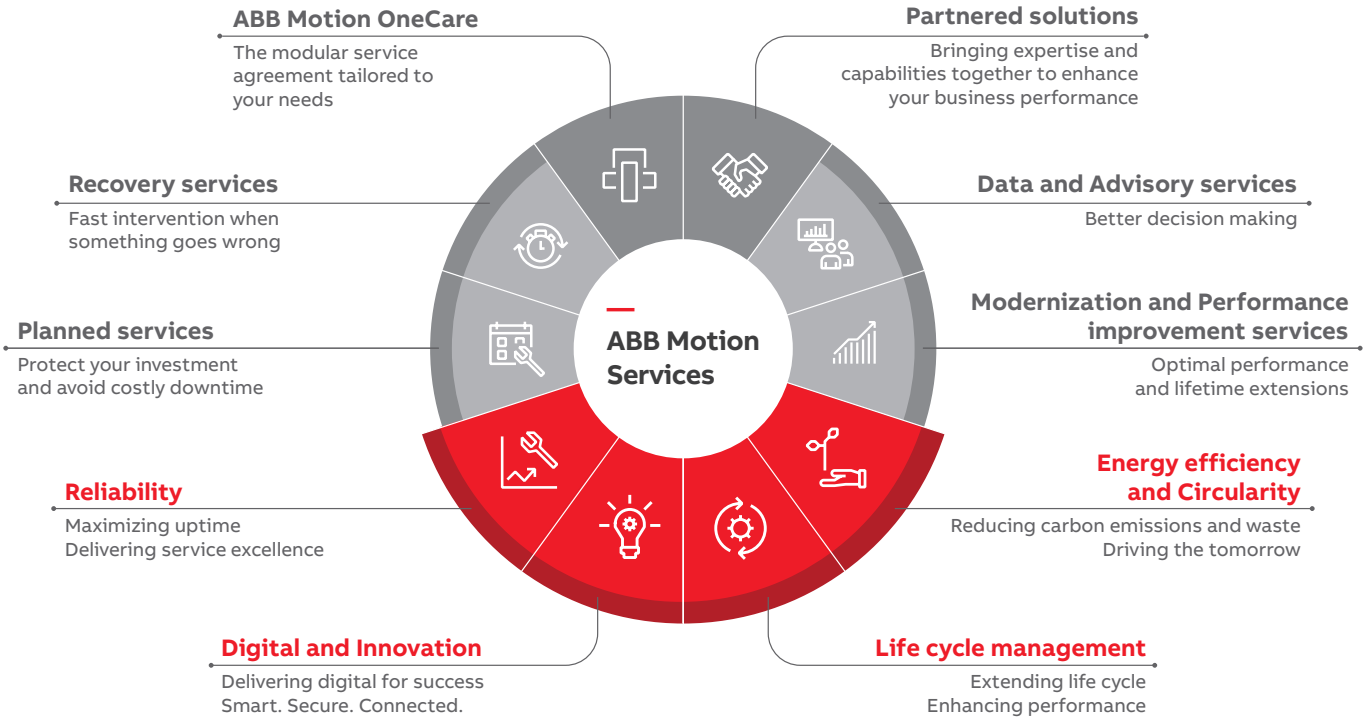
With a service offering tailored to your needs, ABB Motion Services maximizes the uptime and extends the life cycle of your electrical motion solutions, while optimizing their performance and maximizing your energy efficiency gains throughout the entire lifetime of your applications. We help to keep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

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 tailored to your needs service offerings and digital solutions 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
YOUR ADVANTAGE

ABB Drives Life Cycle Management
A life time of peak performance

You're in control of every life cycle phase of your drives. At the heart of drive services is a four-phase product life cycle management model. This model defines the services recommended and available throughout drives lifespan.

Now it's easy for you to see the exact service and maintenance available for your drives.



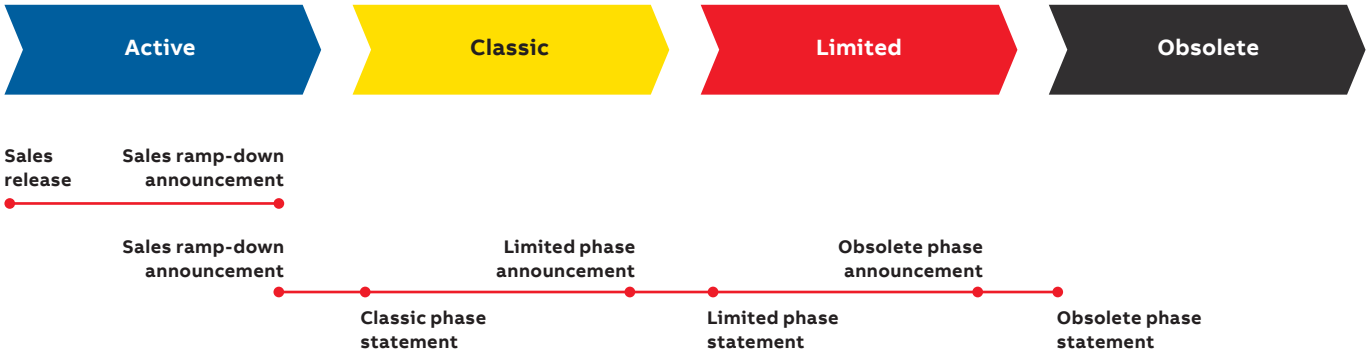
Product	Product is in active sales and manufacturing phase	Serial production has ceased. Product may be available for plant extensions, as a spare or for installed base renewal	Product is no longer available	Product is no longer available
Services	Full range of life cycle services is available	Full range of life cycle services is available. Product enhancements may be available through modernizations	Limited range of life cycle services is available. Spare parts availability is limited to available stock	Replacement and end-of-life services are available

Keeping you informed throughout the life cycle

We notify you every step of the way using life cycle status statements and announcements.

Your benefit is clear information about your drives' status and precise services available. It helps you plan the preferred service actions ahead of time and make sure that continuous support is always available.





Sales release
Details about product portfolio and release schedule.

Sales ramp down announcement
Last time buy and last deliveries dates, informed well in advance.

Life cycle phase change announcement
Early information about the upcoming life cycle phase change and affects on the service availability. Informed well in advance, minimum six months prior to the change.

Life cycle phase statement
Information about the current life cycle status, product and services availability and recommended actions. Plan for the next life cycle phase transition.

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.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.

—

For more information, please contact
your local ABB representative or visit

new.abb.com/drives
new.abb.com/drives/drivespartners
new.abb.com/motors-generators

Learn more
from ACS180 website.

Online manuals
for the ACS180 drives.

© Copyright 2024 ABB. All rights reserved.
Specifications subject to change without notice.

3AXD10001181444 REV D EN 19.3.2024