LOW VOLTAGE AC DRIVES

ABB machinery drives

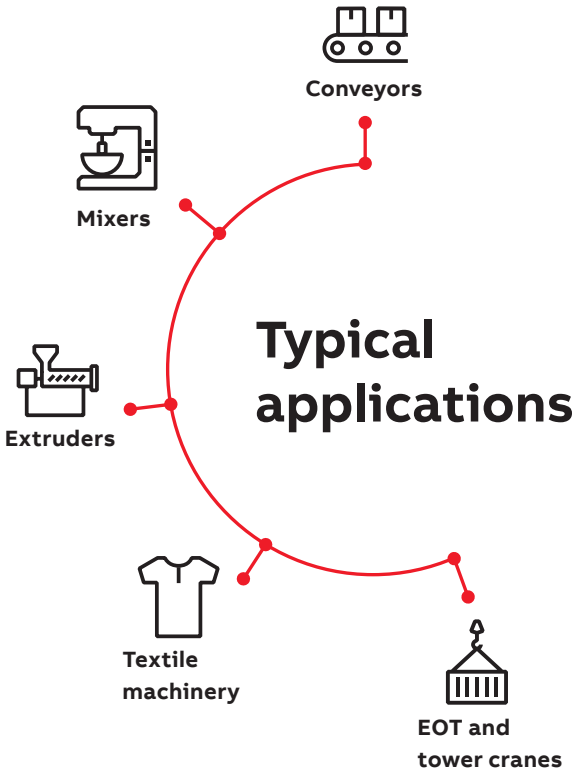
ACS380, 0.25 to 22 kW/0.37 to 30 hp

Reliable performance and ease of integration for machine builders. ACS380 machinery drives.

Table of contents

The ACS380 machinery drives
Reliable performance and ease of integration

Thanks to its reliable performance and ease of integration, the ACS380 is an all-compatible machinery drive ideal for machine building. All-compatible ABB drives share the same architecture and user interface for ease of use.



Excellent motor control
The ACS380 machinery drive is a robust and compact drive ideal for machine building. It can control various motor types from 0.25 to 22 kW. Whether the requirement is high starting torque, accurate speed control, stable torque or dynamic response to sudden load variations, the ACS380 drive meets it with or without encoder feedback.

Ease of integration
The ACS380 drive has many advanced features built-in as standard. A selection of variants and options allow the drive to be optimized for various fieldbus communication, I/O and EMC requirements. With the integrated functional safety features, the ACS380 drive can also be part of the machine's safety system via PROFIsafe over PROFINET and safely stop the motor when required. All together, this saves a lot of time and money for machine builders using large numbers of drives per year.

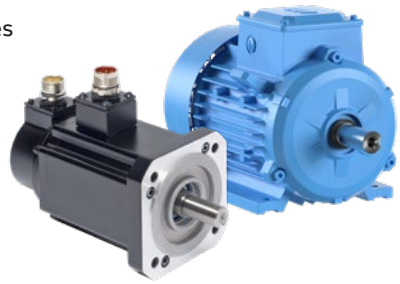
Designed for 10 years lifetime or longer
The design lifetime expectancy of the ACS380 drive and its overall components exceeds 10 years in normal operating environments. In some cases, ACS380 drive can last 20 years or more. Design features including coated circuit boards, minimized air flow through the electronics, and design for up to 50 °C ambient temperature without derating make ACS380 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.


Loc
1499.5rpm
1499.50
rpm
Back
OK
Stop
Start
ABB
HOST
MODULE
NETWORK
ACS380

Reliable performance and ease of integration for machine builders

A perfect match for a wide range of machines
ACS380 drives are available in two variants. The standard variant meets the most typical machinery requirements, whereas the configured variant can be optimized for more specific needs.

Excellent motor control
ACS380 drives support various motor types including induction, permanent magnet and synchronous reluctance motors. Motor control performance with 3-phase current measurement meets demanding load profile requirements. In addition, ACS380 controls induction or permanent magnet motors with or without speed feedback from an encoder.



Ease of integration
An extensive selection of fieldbus adapters enables connectivity with all major industrial automation networks. Communication of the ACS380 drive is automatically set at power up for easy access from a PLC to the drive. Additional analog and digital I/O, or speed feedback can be added with option modules when needed.

Built-in functional safety
Safe torque off (STO) is a standard feature in all ACS380 drives. STO or safe stop 1 (SS1-t) can also be controlled via PFOFIsafe with an optional communication module.

The ACS380 machinery drives are part of ABB's all-compatible drives portfolio. The drives give you consistent performance throughout their whole life cycle. They also offer a wider range of standard and optional features for optimal machine building.

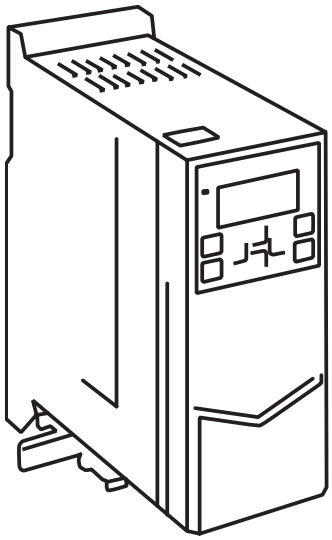
Ease of use
The ACS380 drive has an integrated control panel with a display and control keys. The control panel's icon-based menu helps in setting up the drive quickly and effectively. Also, external user panels are available for installation to a cabinet door or for operation via a Bluetooth connection.

All-compatible user interface
ACS380 is part of ABB all-compatible drives portfolio. Other products in this portfolio are ACS480, ACS580 and ACS880 drives. All these drives have the same, easy to use PC tools and similar intuitive multilingual user interface as well as parameter and function structure, making using and learning them fast and easy.

Drive based programmability
Adaptive programming allows customization of the drive software using sequential and function block programming. This is a standard feature of the ACS380 drive requiring no additional downloads or licenses. It may allow the reduction of system costs by replacing the need for a PLC.

Designed for 10 years lifetime or longer
The ACS380 drives have improved durability and reliability in harsh conditions, including coated circuit boards and minimized air flow through the electronics. The drives are designed for an ambient temperature of up to 50 °C without derating. Also, the foil coated control panel offers good protection against dust and moisture, and the galvanically isolated fieldbus gives noise immunity.

ACS380 drives software with versatile features



Excellent motor control. Whether the requirement is high starting torque, accurate speed control, stable torque or dynamic response to sudden load variations, ACS380 meets it with or without encoder feedback.

One drive for different motor types. ACS380 perfectly supports induction, permanent magnet and synchronous reluctance motors.

Easy integration to automation. Preconfigured fieldbus protocols enable connectivity with all major industrial automation networks with minimal effort and complexity.

"Mini PLC" inside the drive. Scale up and customize the drive to your application's requirements with adaptive programming.

Built-in features for precise movements. Speed or torque reference can easily be adjusted for various needs. Movement range can be controlled with limit switches, and motor stopped in an optimal way with integrated braking chopper and mechanical brake control logic.

Analyze and optimize the operation with a load analyzer, which continuously monitors peak value and distribution of selected signals.

Technical data

Mains connection	
Voltage and power range	1-phase, 200 to 240 V, +10%/-15% 0.25 to 2.2 kW 3-phase, 380 to 480 V, +10%/-15% 0.25 to 22 kW
Frequency	50/60 Hz ± 5%
Common DC connection	
DC voltage level	-1 types 270 to 324 V ±10% -4 types 513 to 648 V ±10%
Charging circuit	Internal charging circuit
Motor connection	
Voltage	0 to U_N, 3-phase
Frequency	0 to 599 Hz
Motor control	Scalar control Vector control
Switching frequency	1 to 12 kHz, default 4 kHz
Dynamic braking	Flux braking (moderate or full) Resistor braking (optional)
Motor control performance	
Speed control performance, open loop	
Static accuracy	20% of motor rated slip
Dynamic accuracy	1% seconds with 100% torque step
Speed control performance, closed loop	
Static accuracy	0.1% of motor rated speed
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	Built-in brake chopper as standard
Brake resistor	External resistor connected to drive
Functional safety	
Built-in safety features	Safe torque off (STO) EN/IEC61800-5-2: IEC61508 ed2: SIL 3, IEC 61511: SIL 3, IEC 62061: SIL CL 3, EN ISO 13849-1: PL e/cat. 3

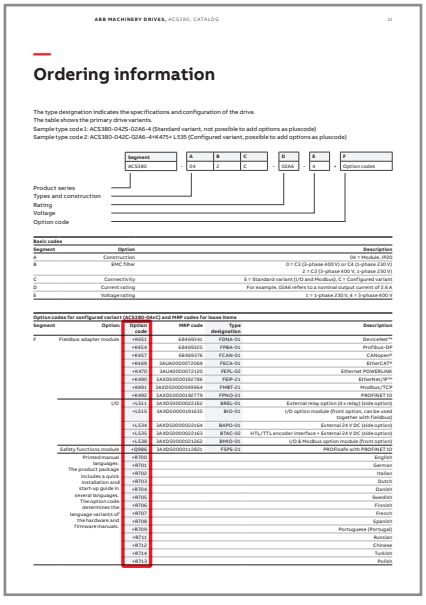
Environmental limits	
Ambient temperature	
Transportation and storage	-40 to +70 °C (-40 to +158 °F)
Operation	-10 to +50 °C (14 to 122 °F), with derating up to 60 °C (except R0, which has max. temperature of 50 °C)
Cooling method	Air-cooled, dry clean air
Altitude	0 to 4000 m, (0 to 13000 ft) for 400 V units (see allowed power systems in HW manual) 0 to 2000 m, (0 to 6600 ft) for 200 V units derating above 1000 m (3300 ft)
Relative humidity	5 to 95%, no condensation allowed
Degree of protection	IP20 as standard Optional UL type 1 Kit
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 2, 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 UL, cUL certification – file E211945 TUV Certification for functional safety Quality assurance system ISO 9001 Environmental system ISO 14001 Waste electrical and electronic equipment directive (WEEE) 2002/96/EC RoHS directive 2011/65/EU EAC, KC, RCM

How to select a drive

How you build up your ordering code

Start by identifying your supply voltage This indicates what rating table to use; see page 12.

Select the ordering code for the ACS380 machinery drive by choosing either the standard or the configured variant (page 11). Then choose the desired EMC level on page 11. If the configured variant is selected, choose the desired fieldbus protocol (page 17) by selecting the correct option code and add the option codes to the drive's ordering code.



Ordering information

The type designation indicates the specifications and configuration of the drive.
The table shows the primary drive variants.
Sample type code 1: ACS380-042S-02A6-4 (Standard variant, not possible to add options as pluscode)
Sample type code 2: ACS380-042C-02A6-4+K475+L535 (Configured variant, possible to add options as pluscode)

Segment	A	B	C		D	E		F
ACS380	- 04	2	C	-	02A6	4	+	Option codes

Product series
Types and construction
Rating
Voltage
Option code

Basic codes

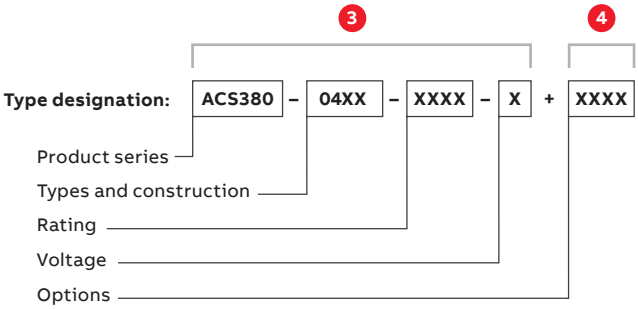
Segment	Option	Description
A	Construction	04 = Module, IP20
B	EMC filter	0 = C3 (3-phase 400 V) or C4 (1-phase 230 V) 2 = C2 (1-phase 400 V, 3-phase 230 V)
C	Connectivity	S = Standard variant (I/O and Modbus), C = Configured variant
D	Current rating	For example, 02A6 refers to a nominal output current of 2.6 A
E	Voltage rating	2 = 1-phase 230 V, 4 = 3-phase 400 V

Option codes for configured variant (ACS380-04xC) and MRP codes for loose items

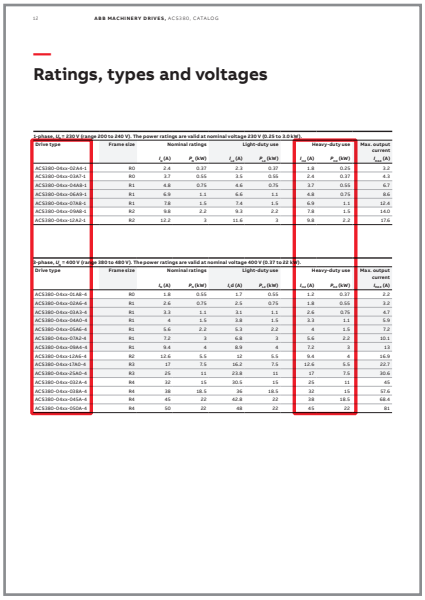
Segment	Option	Option code	MRP code	Type designation	Description
F	Fieldbus adapter module	+K451	68460240	FDNA-01	DeviceNet™
		+K454	68465925	FPBA-01	Profibus-DP
		+K457	68469276	FCAN-01	CANopen®
		+K469	3AUA0000072069	FECA-01	EtherCAT®
		+K470	3AUA0000072120	FEPL-02	Ethernet POWERLINK
		+K490	3AXD50000192786	FEIP-21	Ethernet/IP™
		+K491	3AXD50000469964	FMBT-21	Modbus/TCP
		+K492	3AXD50000192779	FPNO-21	PROFINET IO
	I/O	+L511	3AXD50000021262	BREL-01	External relay option (4 x relay) (side option)
		+L515	3AXD50000191635	BIO-01	I/O option module (Front option, can be used together with Fieldbus)
		+L534	3AXD50000022164	BAPO-01	External 24 V DC (side option)
		+L535	3AXD50000021163	BTAC-02	HTL/TTL encoder interface + External 24 V DC (side option)
		+L538	3AXD50000021262	BMIO-01	I/O & Modbus option module (Front option)
	Safety functions module	+Q986	3AXD50000119825	FSPS-21	PROFIsafe with PROFINET IO
	Printed manual languages. The product package includes a quick installation and start-up guide in several languages. The option code determines the language variants of the hardware and firmware manuals.	+R700			English
		+R701			German
		+R702			Italian
		+R703			Dutch
		+R704			Danish
		+R705			Swedish
		+R706			Finnish
		+R707			French
		+R708			Spanish
		+R709			Portuguese (Portugal)
		+R711			Russian
		+R712			Chinese
		+R714			Turkish
		+R715			Polish

Page 11

Choose other options (on page 22) and add the option codes to the drive's order code. Remember to use a "+" mark before each option code.



Choose the motor power and current rating from the ratings table on page 12.



Ratings, types and voltages

1-phase, U_1 = 200 V (range 200 to 240 V). The power ratings are valid at nominal voltage 230 V. (0.25 to 3.0 kW).

Drive type	Frame size	Nominal ratings		Light-duty use		Heavy-duty use		Max. output current
		I_1 (A)	P_n (kW)	I_d (A)	P_d (kW)	I_{ld} (A)	P_{ld} (kW)	I_{max} (A)
ACS380-04xx-02A4-1	R0	2.4	0.37	2.3	0.37	1.8	0.25	3.2
ACS380-04xx-03A7-1	R0	3.7	0.55	3.5	0.55	2.4	0.37	4.3
ACS380-04xx-04A8-1	R1	4.8	0.75	4.6	0.75	3.7	0.55	6.7
ACS380-04xx-06A9-1	R1	6.9	1.1	6.6	1.1	4.8	0.75	8.6
ACS380-04xx-07A8-1	R1	7.8	1.5	7.4	1.5	6.9	1.1	12.8
ACS380-04xx-09A8-1	R2	9.8	2.2	9.3	2.2	7.8	1.5	14.0
ACS380-04xx-12A2-1	R2	12.2	3	11.6	3	9.8	2.2	17.6

3-phase, U_1 = 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_1 (A)	P_n (kW)	I_d (A)	P_d (kW)	I_{ld} (A)	P_{ld} (kW)	I_{max} (A)
ACS380-04xx-01A8-4	R0	1.8	0.55	1.7	0.55	1.2	0.37	2.2
ACS380-04xx-02A6-4	R1	2.6	0.75	2.5	0.75	1.8	0.55	3.2
ACS380-04xx-03A3-4	R1	3.3	1.1	3.1	1.1	2.6	0.75	4.7
ACS380-04xx-04A0-4	R1	4	1.5	3.8	1.5	3.3	1.1	5.9
ACS380-04xx-05A6-4	R1	5.6	2.2	5.3	2.2	4	1.5	7.2
ACS380-04xx-07A2-4	R1	7.2	3	6.8	3	5.6	2.2	10.1
ACS380-04xx-09A4-4	R1	9.4	4	8.9	4	7.2	3	13
ACS380-04xx-12A6-4	R2	12.6	5.5	12	5.5	9.4	4	16.9
ACS380-04xx-17A0-4	R3	17	7.5	16.2	7.5	12.6	5.5	22.7
ACS380-04xx-25A0-4	R3	25	11	23.8	11	17	7.5	30.6
ACS380-04xx-032A-4	R4	32	15	30.5	15	25	11	45
ACS380-04xx-038A-4	R4	38	18.5	36	18.5	32	15	57.6
ACS380-04xx-045A-4	R4	45	22	42.8	22	38	18.5	68.4
ACS380-04xx-050A-4	R4	50	22	48	22	45	22	81

Page 12

I/O option modules

ACS380 drives can be ordered with different I/O configurations. The standard input and output of the drive can be extended by using I/O option modules. A BIO-01 module extends the configured variant's I/O, whereas a BMIO-01 module provides both additional I/O and Modbus. In case additional relay outputs are needed, they can be added with a BREL-01 module. A BAPO-01 module introduces an external 24 V DC supply to the drive's control circuits.

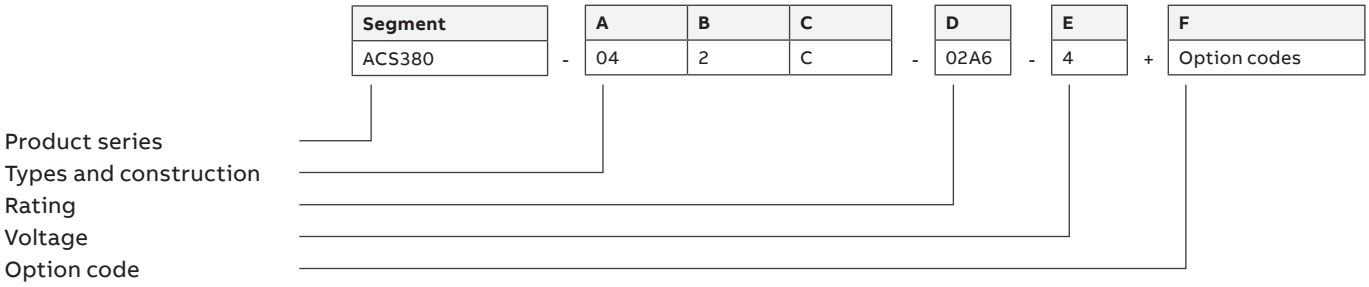
The ACS380 drive's open loop performance is sufficient for almost any application, even when accurate control is needed close to zero speed. However, if speed feedback is needed for even more accurate control or for active loads like hoists, a speed feedback module BTAC-02 adds support for TTL and HTL pulse encoders.

I/O option modules Option code	Description	Module
+L511	External relay option, 4 x NO (side option)	BREL-01
+L515	I/O option (front option). Can be used together with Fieldbus.	BIO-01
+L534	External 24 V DC (side option)	BAPO-01
+L535	HTL/TTL encoder interface + External 24 V DC (side option)	BTAC-02
+L538	I/O & Modbus extension (front option)	BMIO-01

Page 22

Ordering information

The type designation indicates the specifications and configuration of the drive.
The table shows the primary drive variants.
Sample type code 1: ACS380-042S-02A6-4 (Standard variant, not possible to add options as pluscode)
Sample type code 2: ACS380-042C-02A6-4+K475+ L535 (Configured variant, possible to add options as pluscode)



Basic codes

Segment	Option	Description
A	Construction	04 = Module, IP20
B	EMC filter	0 = C3 (3-phase 400 V) or C4 (1-phase 230 V) 2 = C2 (3-phase 400 V, 1-phase 230 V)
C	Connectivity	S = Standard variant (I/O and Modbus), C = Configured variant
D	Current rating	For example, 02A6 refers to a nominal output current of 2.6 A
E	Voltage rating	1 = 1-phase 230 V, 4 = 3-phase 400 V

Option codes for configured variant (ACS380-04xC) and MRP codes for loose items

Segment	Option	Option code	MRP code	Type designation	Description
F	Fieldbus adapter module	+K451	68469341	FDNA-01	DeviceNet™
		+K454	68469325	FPBA-01	Profibus-DP
		+K457	68469376	FCAN-01	CANopen®
		+K469	3AUA0000072069	FECA-01	EtherCAT®
		+K470	3AUA0000072120	FEPL-02	Ethernet POWERLINK
		+K490	3AXD50000192786	FEIP-21	EtherNet/IP™
		+K491	3AXD50000049964	FMBT-21	Modbus/TCP
		+K492	3AXD50000192779	FPNO-21	PROFINET IO
	I/O	+L511	3AXD50000022162	BREL-01	External relay option (4 x relay) (side option)
		+L515	3AXD50000191635	BIO-01	I/O option module (front option, can be used together with fieldbus)
		+L534	3AXD50000022164	BAPO-01	External 24 V DC (side option)
		+L535	3AXD50000022163	BTAC-02	HTL/TTL encoder interface + External 24 V DC (side option)
		+L538	3AXD50000021262	BMIO-01	I/O & Modbus option module (front option)
	Safety functions module	+Q986	3AXD50000112821	FSPS-21	PROFIsafe with PROFINET IO
	Printed manual languages: The product package includes a quick installation and start-up guide in several languages. The option code determines the language variants of the hardware and firmware manuals.	+R700			English
		+R701			German
		+R702			Italian
		+R703			Dutch
		+R704			Danish
		+R705			Swedish
		+R706			Finnish
		+R707			French
		+R708			Spanish
		+R709			Portuguese (Portugal)
		+R711			Russian
		+R712			Chinese
		+R714			Turkish
		+R713			Polish

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 3.0 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)
ACS380-04xx-02A4-1	R0	2.4	0.37	2.3	0.37	1.8	0.25	3.2
ACS380-04xx-03A7-1	R0	3.7	0.55	3.5	0.55	2.4	0.37	4.3
ACS380-04xx-04A8-1	R1	4.8	0.75	4.6	0.75	3.7	0.55	6.7
ACS380-04xx-06A9-1	R1	6.9	1.1	6.6	1.1	4.8	0.75	8.6
ACS380-04xx-07A8-1	R1	7.8	1.5	7.4	1.5	6.9	1.1	12.4
ACS380-04xx-09A8-1	R2	9.8	2.2	9.3	2.2	7.8	1.5	14.0
ACS380-04xx-12A2-1	R2	12.2	3	11.6	3	9.8	2.2	17.6

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)
ACS380-04xx-01A8-4	R0	1.8	0.55	1.7	0.55	1.2	0.37	2.2
ACS380-04xx-02A6-4	R1	2.6	0.75	2.5	0.75	1.8	0.55	3.2
ACS380-04xx-03A3-4	R1	3.3	1.1	3.1	1.1	2.6	0.75	4.7
ACS380-04xx-04A0-4	R1	4	1.5	3.8	1.5	3.3	1.1	5.9
ACS380-04xx-05A6-4	R1	5.6	2.2	5.3	2.2	4	1.5	7.2
ACS380-04xx-07A2-4	R1	7.2	3	6.8	3	5.6	2.2	10.1
ACS380-04xx-09A4-4	R1	9.4	4	8.9	4	7.2	3	13
ACS380-04xx-12A6-4	R2	12.6	5.5	12	5.5	9.4	4	16.9
ACS380-04xx-17A0-4	R3	17	7.5	16.2	7.5	12.6	5.5	22.7
ACS380-04xx-25A0-4	R3	25	11	23.8	11	17	7.5	30.6
ACS380-04xx-032A-4	R4	32	15	30.5	15	25	11	45
ACS380-04xx-038A-4	R4	38	18.5	36	18.5	32	15	57.6
ACS380-04xx-045A-4	R4	45	22	42.8	22	38	18.5	68.4
ACS380-04xx-050A-4	R4	50	22	48	22	45	22	81

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

The ratings apply at 50 °C ambient temperatures.
For derating at higher altitudes, temperatures or switching frequencies, see the user's HW manual, document code: 3AXD50000029274.

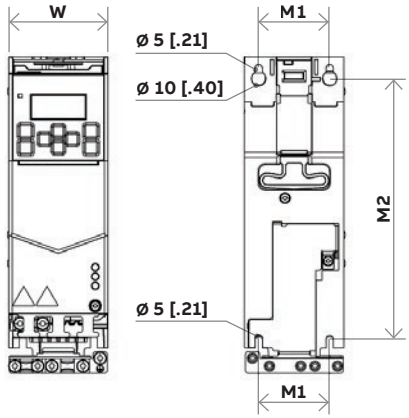
Dimensions

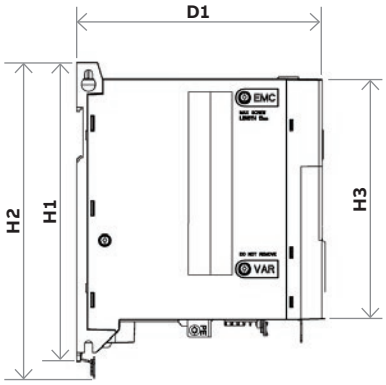
Dimensions and weights (IP20 / UL open type)

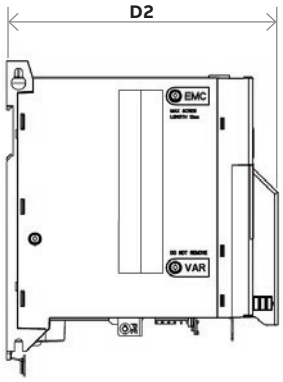
Frame size	H1 (mm)	H2 (mm)	H3 (mm)	W (mm)	D1 (mm)	D2 (mm)	M1 (mm)	M2 (mm)	Weight (kg)
R0	205	223	170	70	176	191	50	191	1.4
R1	205	223	170	70	176	191	50	191	1.4
R2	205	223	170	95	176	191	75	191	2.0
R3	205	223	170	170	176	191	148	191	3.3
R4	205	240	170	260	176	191	234	191	5.3

H1 = Mounting surface height (back)
H2 = Height including grounding plate (back)
H3 = Enclosure height (front)
W = Width
D1 = Depth
D2 = Depth with deeper cover *)
M1 = Mounting hole distance 1
M2 = Mounting hole distance 2

*) Deeper cover (with BIO-01 or FSPS-21) will increase normal depth (D1) by 15 mm







Drive commissioning and adaptable use with your control panel

The ACS380 drive has an integrated control panel with a display and control keys. Also, external control panels are available for installation to a cabinet door or for operation via Bluetooth connection.

Control panel as standard
Almost anyone can set up and commission the machinery drive using the available control panels. The ACS380 comes with the integrated icon-based control panel as standard. You do not need to know any drive parameters as the control panel helps you to set up the essential settings quickly and get the drive into action. In addition, ACS380 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, as 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, for example, commission and monitor the drive remotely.

Basic control panel, ACS-BP-S
If there is a need to install a basic panel into 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: 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
3AXD50000131976	Panel bus adapter	BSPL-01
3AXD50000128624	Panel bus termination plug	BPLG-01

Tools for configuration, monitoring and process tuning

ACS380 has various tools to simplify the commissioning, operation and monitoring of the drive.

Easy configuration for unpowered drives
With the CCA-01 tool, it is possible to configure drive parameters and even download new software from PC to the unpowered ACS380. The power is supplied by a PC USB port.

Drive composer
The Drive composer PC tool offers fast and harmonized setup, commissioning and monitoring. Drive composer entry (a free version of the tool) provides startup and maintenance capabilities and gathers all drive information, such as parameter loggers, faults, and backups 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.

Using the BCBL-01 cable, the PC can be connected directly to the RJ-45 panel port on the top of the ACS380 drive.

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

Ordering code	Description	Type designation
3AXD50000032449	PC cable, USB to RJ45	BCBL-01
3AXD50000019865	Cold configurator adapter, packed kit	CCA-01
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

Flexible connectivity to automation networks

Fieldbus communication reduces wiring costs compared with traditional hard-wired input/output connections.

The ACS380 configured variant is compatible with a wide range of fieldbus protocols. Fieldbus adapter modules are automatically configured during first power up, thus reducing commissioning time and allowing drive commissioning from the PLC. The ACS380 standard variant comes with built-in Modbus RTU protocol.

Support tools for integration with automation
Support for the fieldbuses is not always enough to get the full functionality and to make integration easy. For this reason, ABB also offers tools for seamless integration to automation systems of various manufacturers.

Universal communication with ABB fieldbus adapters
The machinery drives support the following fieldbus protocols:

Option code	Fieldbus protocol	Adapter module
+K451	DeviceNet™	FDNA-01
+K454	PROFIBUS DP, DPV0/DPV1	FPBA-01
+K457	CANopen®	FCAN-01
+K469	EtherCAT®	FECA-01
+K470	Ethernet POWERLINK	FEPL-02
+K490	Ethernet/IP™	FEIP-21
+K491	Modbus/TCP	FMBT-21
+K492	PROFINET IO	FPNO-21

Safety options

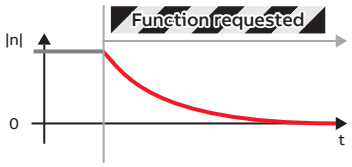
Integrated safety
Integrated safety reduces the need for external safety components, simplifying configuration and reducing installation space. The safety functionality is a built-in feature of the ACS380, with safe torque off (STO) as standard. ACS380 can also be part of PROFIsafe over PROFINET network, where safety PLC is controlling the STO or safe stop 1, time controlled, SS1-t functionality. This connectivity and functionality can be done by using the FSPS-21 option module.

The drives' 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 safety performance level (SIL 3/PL e) for machinery safety. It is possible to install the safety modules also afterwards to the drive.

PROFIsafe safety functions module FSPS-21
The FSPS-21 module has integrated PROFIsafe, safety functions and PROFINET IO connection. The ready-made safety functions make safety configuration in the drive unnecessary. The module supports STO and SS1-t safety functions. It is used together with a safety PLC that supports PROFIsafe over PROFINET communication.

For more information see FSPS-21 PROFIsafe safety functions module web page at new.abb.com/drives/functional-safety

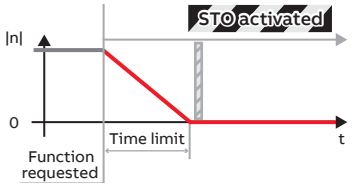
Safe torque off (STO)



STO is the basic foundation of drive-based functional safety, as it brings a drive safely to no-torque state making the motor coast to stop. Integrated STO-function simplifies the safety circuit as external components are not needed to safely stop the application.

- **STO** is a standard safety function in all ABB drives.
- Typically used for prevention of an unexpected startup
- (EN ISO 14118) of machinery or for an emergency stop, fulfilling stop category 0 (EN 13850 / IEC 60204-1).

Safe stop 1, time controlled (SS1-t)



Safe stop 1 stops the motor safely with a controlled ramp stop and stop time monitoring. SS1-t initiates the ramp stop from the drive and activates STO when speed reaches zero. If the drive is not decelerating to zero speed within the time limit, the STO function is activated. SS1-t is typically used in applications where motion must be stopped quickly and safely before switching to a no-torque state.

- **SS1-t** stops the motor safely, using a controlled ramp stop and then activates the STO function.
- **SS1-t** can be used to implement an Emergency stop, fulfilling stop category 1 (EN/IEC 60204-1).

PROFIsafe safety functions module FSPS-21

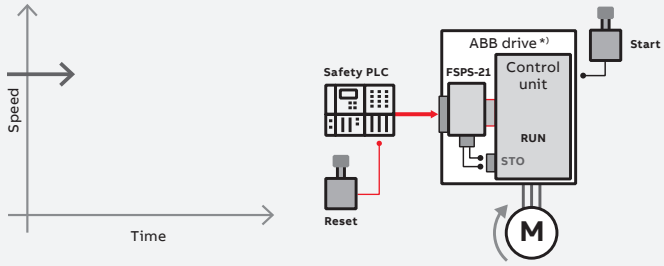
Option code	Ordering code	Module
+Q986	3AXD50000112821	FSPS-21

Note: This module isn't compatible with other fieldbus option modules for ACS380 and ACS580 drives

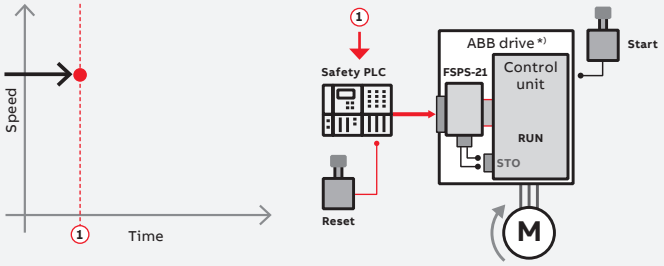
Example: SS1-t

Safety function module FSPS-21, functionality cycle

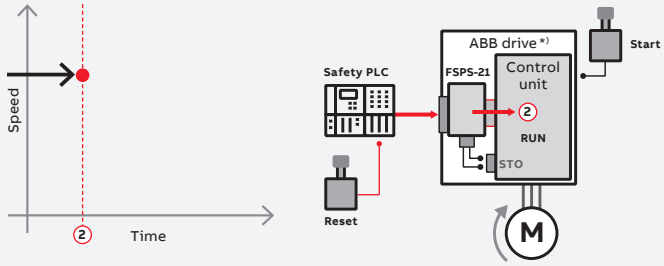
0. Drive running



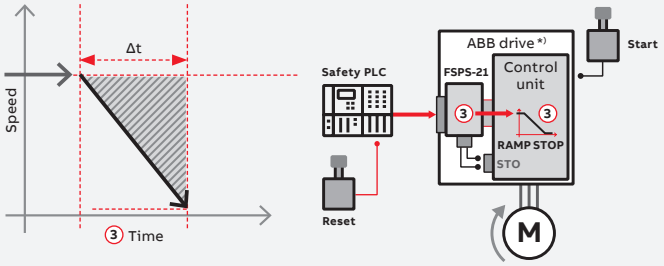
1. Safety PLC – safety function request to the FSPS-21



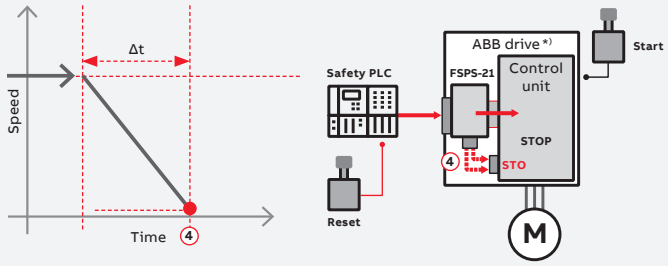
2. SS1-t, safety functions request / start of monitoring



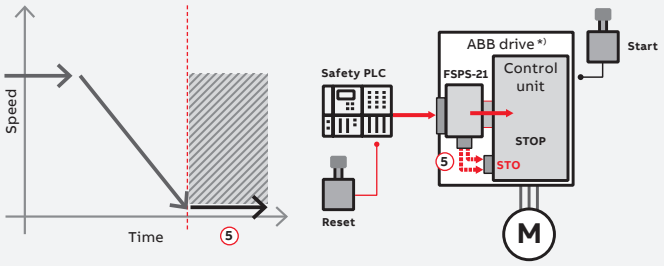
3. Transition and time monitoring of the SS1-t



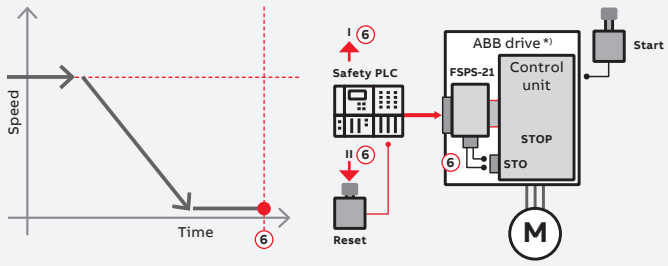
4. Zero speed or SS1-t time limit reached / STO is opened



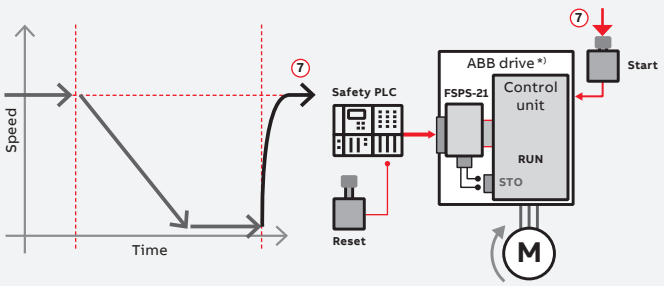
5. Safe state / STO is open



6. Safety function request removed / reset / STO is closed



7. Start – return to normal operation



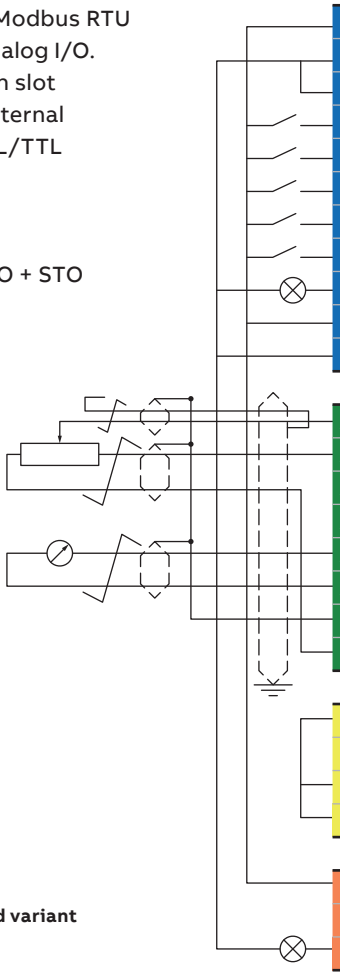
*) The ABB drive can be ACS380, ACS580 or ACS880

Connectivity variants

Standard variant (ACS380-04xS)
The ACS380 machinery drives offer two variants for connectivity. A standard variant (ACS380-04xS) includes BMIO-01 module in front side option slot to support Modbus RTU and a wide range of digital and analog I/O. Optional features via a side option slot include relay ouputs (BREL-01), external 24 V DC supply (BAPO-01) and HTL/TTL encoder feedback (BTAC-02).

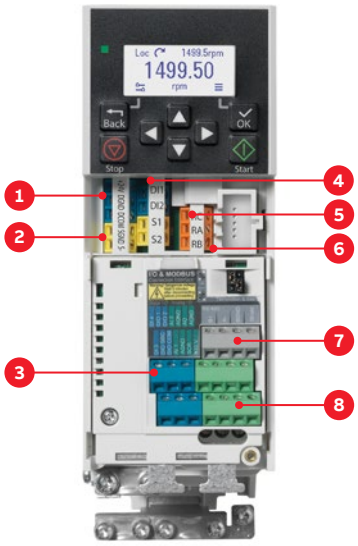
The standard variant includes:
- 4 DI + 2 DI/DO + 2 AI + 1 AO + 1 RO + STO
- Embedded Modbus RTU

Default I/O connections of standard variant (ACS380-04xS)



Terminals	Descriptions
	Aux. voltage output and digital connections
+24 V	Aux. voltage output +24 V DC, max. 250 mA
DGND	Aux. voltage output common
DCOM	Digital input common for all
DI 1	Digital input 1: Stop (0)/Start (1)
DI 2	Digital input 2: Forward (0)/Reverse (1)
DI 3	Digital input 3: Speed selection
DI 4	Digital input 4: Speed selection
DIO 1	Digital input function: Ramp set 1 (0)/Ramp set 2 (1)
DIO 2	Digital output function: Ready to run (0)/Not ready (1)
DIO SRC	Signal cable shield (screen)
DIO COM	Digital input common for all
	Reference voltage and analog I/O
AI 1	Output frequency/Speed reference (0...10 V)
AGND	Analog input circuit common
AI 2	Not configured
AGND	Analog input circuit common
AO	Output frequency (0...20 mA)
AGND	Analog output circuit common
SCR	Signal cable shield (screen)
+10 V	Reference voltage
	Safe torque off (STO)
S+	Safe torque-off function. Connected at the factory. The drive starts only when both circuits are closed. Refer to the Safe torque off function in the hardware manual.
SGND	
S 1	
S 2	
	Relay output
RC	No fault [Fault (-1)]
RA	
RB	
	EIA-485 Modbus RTU
B+	Embedded Modbus RTU (EIA-485)
A-	
BGND	
Shield	
Termination	

Default I/O connections of the standard variant



1. Auxiliary voltage outputs
2. Safe torque off connections
3. Digital inputs and outputs
4. Digital inputs
5. Relay output connection
6. Cold configuration connection for CCA-01
7. EIA-485 Modbus RTU
8. Analog inputs and outputs

Configured variant (ACS380-04xC)
A configured variant (ACS380-04xC) can be configured with different options covering digital and analog I/O, fieldbus communication, speed feedback and external 24 V DC supply. The configured variant offers maximum flexibility for connectivity to any machine.

The configured variant includes:
- 2 DI + 1 RO + STO + one preconfigured fieldbus

Options:

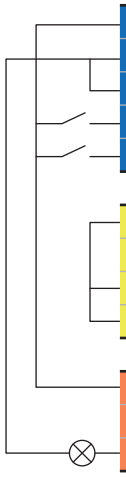
Fieldbus options
PROFIBUS, PROFINET/PROFIsafe, EtherNet/IP™, Modbus TCP/IP, EtherCAT®, POWERLINK, DeviceNet™, CanOpen®

One of following side options
- HTL/TTL encoder & ext. 24 V DC supply (BTAC-02)
- 4 x relay output module (BREL-01)
- External 24 V DC supply (BAPO-01)

One front I/O option
can be used together with fieldbus
3 DI + 1 DO + 1 AI (BIO-01)

ACS380 configurant variant (ACS380-04xC)

Default connections of configured variant (ACS380-04xC)



Terminals	Descriptions
	Aux. voltage output and digital connections
+24 V	Aux. voltage output +24 V DC, max. 250 mA
DGND	Aux. voltage output common
DCOM	Digital input common for all
DI 1	Digital input 1: Stop (0)/Start (1)
DI 2	Digital input 2: Forward (0)/Reverse (1)
	Safe torque off (STO)
S+	Safe torque off function. Connected at the factory. The drive starts only when both circuits are closed. Refer to the Safe torque off function in the hardware manual.
SGND	
S 1	
S 2	
	Relay output
RC	Fault (-1)
RA	250 V AC/30 V DC
RB	2 A
	Option module connections
	See table on page 17 for available fieldbus connection options and table on page 22 for I/O options.

I/O option modules

ACS380 drives can be ordered with different I/O configurations. The standard input and output of the drive can be extended by using I/O option modules. A BIO-01 module extends the configured variant's I/O, whereas a BMIO-01 module provides both additional I/O and Modbus. In case additional relay outputs are needed, they can be added with a BREL-01 module. A BAPO-01 module introduces an external 24 V DC supply to the drive's control circuits.

The ACS380 drive's open loop performance is sufficient for almost any application, even when accurate control is needed close to zero speed. However, if speed feedback is needed for even more accurate control or for active loads like hoists, a speed feedback module BTAC-02 adds support for TTL and HTL pulse encoders.

I/O option modules		
Option code	**Description**	**Module**
+L511	External relay option, 4 x RO (side option)	BREL-01
+L515	I/O option (front option). Can be used together with fieldbus.	BIO-01
+L534	External 24 V DC (side option)	BAPO-01
+L535	HTL/TTL encoder interface + External 24 V DC (side option)	BTAC-02
+L538	I/O & Modbus extension (front option)	BMIO-01

Resistor braking

Brake chopper
The brake chopper is built in as standard for the ACS380. 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.

Brake resistor
The brake resistors are separately available for the ACS380. 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
ACS380-04xx-02A4-1	R0	32.5	468	0.25	0.38	CBH 360 C T 406 210R, CAR 200 D T 406 210R
ACS380-04xx-03A7-1	R0	32.5	316	0.37	0.56	
ACS380-04xx-04A8-1	R1	32.5	213	0.55	0.83	
ACS380-04xx-06A9-1	R1	32.5	145	0.75	1.10	CBR-V 330 D T 406 78R UL
ACS380-04xx-07A8-1	R1	32.5	96.5	1.10	1.70	
ACS380-04xx-09A8-1	R2	32.5	69.9	1.50	2.30	CBR-V 560 D HT 406 39R UL
ACS380-04xx-12A2-1	R2	19.5	47.1	2.20	3.30	

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 ACS380 hardware manual for the selection guidelines.

3-phase 400 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
ACS380-04xx-01A8-4	R0	99	933	0.37	0.56	CBH 360 C T 406 210R, CAR 200 D T 406 210R
ACS380-04xx-02A6-4	R1	99	628	0.55	0.83	
ACS380-04xx-03A3-4	R1	99	428	0.75	1.13	
ACS380-04xx-04A0-4	R1	99	285	1.10	1.65	
ACS380-04xx-05A6-4	R1	99	206	1.50	2.25	
ACS380-04xx-07A2-4	R1	53	139	2.20	3.30	CBR-V 330 D T 406 78R UL
ACS380-04xx-09A4-4	R1	53	102	3.00	4.50	
ACS380-04xx-12A6-4	R2	32	76	4.00	6.00	
ACS380-04xx-17A0-4	R3	32	54	5.50	8.25	CBR-V 560 D HT 406 39R UL
ACS380-04xx-25A0-4	R3	23	39	7.50	11.25	
ACS380-04xx-032A-4	R4	6	29	11.00	17	CBT-H 560 D HT 406 19R
ACS380-04xx-038A-4	R4	6	24	15.00	23	CBT-H 760 D HT 406 16R
ACS380-04xx-045A-4	R4	6	20	18.50	28	
ACS380-04xx-050A-4	R4	6	20	22.00	33	

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 ACS380 hardware manual for the selection guidelines.

EMC – electromagnetic compatibility

The ACS380 machinery drives are equipped with a built-in filter to reduce high-frequency emissions. Low EMC filters (C3 for 400 V and C4 for 230 V) are denoted by type code ACS380-040X and high EMC filters (C2 for all voltages) by type code ACS380-042X. C1 can be achieved with an external EMC filter.

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 including 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	Type	Frame size	EMC category (EN 61800-3), max. cable length with internal/external EMC filter		
			C1	C2	C3
1-phase 230 V	ACS380-04xx-xxxx-1	R0	- / 10 m	10 m / -	- / -
		R1			
		R2	- / -		
3-phase 400 V	ACS380-04xx-xxxx-4	R0	- / 30 m	10 m / -	30 m / -
		R1	- /40 m		
		R2			20 m / -
		R3			30 m / -
		R4	- / 30 m		

- Internal filter: C2 with ACS380-042x-xxxx-x, C3 with ACS380-040x-xxxx-4
- External filter: Please see page 27 Filters and chokes for the suitable external filter type

Filters and chokes

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.

Frame size / voltage rating	R0, R1, R2	R3, R4
1-phase 230 V	>5.0 kA	>7.5 kA
3-phase 380...480 V	>5.0 kA	>10 kA

1-phase U_N = 200...240 V (200, 208, 220, 230, 240 V)

Drive type	C1 filter ABB type / Schaffner type	Input choke Max. ambient temp. 40 °C	du/dt filter Max. ambient temp. 40 °C
ACS380-04xx-02A4-1	RFI-11 / FN21754-6.1-07	CHK-A1	ACS-CHK-B3
ACS380-04xx-03A7-1	RFI12 / FN21754-16.1-07	CHK-B1	ACS-CHK-B3
ACS380-04xx-04A8-1	RFI12 / FN21754-16.1-07	CHK-B1	ACS-CHK-B3
ACS380-04xx-06A9-1	RFI12 / FN21754-16.1-07	CHK-C1	ACS-CHK-C3
ACS380-04xx-07A8-1	RFI12 / FN21754-16.1-07	CHK-C1	ACS-CHK-C3
ACS380-04xx-09A8-1	–	CHK-D1	ACS-CHK-C3
ACS380-04xx-12A2-1	–	CHK-D1	ACS-CHK-C3

3-phase U_N = 380...480 V (380, 400, 415, 440, 460, 480 V)

Drive type	C1 filter ABB type / Schaffner type	Input choke Max. ambient temp. 40 °C	du/dt filter Max. ambient temp. 40 °C
ACS380-04xx-01A8-4	RFI 32 / FN 3268-16-44	CHK-01	ACS-CHK-B3
ACS380-04xx-02A6-4	RFI 32 / FN 3268-16-44	CHK-01	ACS-CHK-B3
ACS380-04xx-03A3-4	RFI 32 / FN 3268-16-44	CHK-01	ACS-CHK-B3
ACS380-04xx-04A0-4	RFI 32 / FN 3268-16-44	CHK-02	ACS-CHK-C3
ACS380-04xx-05A6-4	RFI 32 / FN 3268-16-44	CHK-02	ACS-CHK-C3
ACS380-04xx-07A2-4	RFI 32 / FN 3268-16-44	CHK-02	NOCH0016-6x
ACS380-04xx-09A4-4	RFI 32 / FN 3268-16-44	CHK-03	NOCH0016-6x
ACS380-04xx-12A6-4	RFI-33 /FN 3268-30-33	CHK-03	NOCH0016-6x
ACS380-04xx-17A0-4	RFI-33 /FN 3268-30-33	CHK-04	NOCH0030-6x
ACS380-04xx-25A0-4	RFI-34 / FN3258-100-35	CHK-04	NOCH0030-6x
ACS380-04xx-032A-4	RFI-34 / FN3258-100-35	CHK-05	NOCH-0030-6x
ACS380-04xx-038A-4	RFI-34 / FN3258-100-35	CHK-06	NOCH-0070-6x
ACS380-04xx-045A-4	RFI-34 / FN3258-100-35	CHK-06	NOCH-0070-6x
ACS380-04xx-050A-4	RFI-34 / FN3258-100-35	CHK-07	NOCH-0070-6x

Cooling, fuses and circuit breakers

Cooling

ACS380 drives are fitted with variable-speed cooling air fans. The cooling air must be free from corrosive materials and must not exceed the maximum ambient temperature of 50 °C (60 °C with derating). *)

Fuse and circuit breakers

Standard fuses and circuit breakers can be used with the ACS380 drives. For input fuse or circuit breaker specifications, see the table below. Manual motor protectors can also be used. See ACS380 hardware manual for details.

Cooling air flow and recommended input protection fuses

1-phase U_N = 200...240 V (200, 208, 220, 230, 240 V)

Drive type	Frame size	Heat dissipation *)		Air flow	Max. noise level	IEC fuses		IEC fuses		UL fuses	
		(W)	BTU/Hr	(m^3/h)	(dBA)	(A)	Fuse type	(A)	Fuse type	(A)	Fuse type
ACS380-04xx-02A4-1	R0	51	173	– *)	0	10	gG	32	gR	10	UL class T
ACS380-04xx-03A7-1	R0	65	221	– *)	0	10	gG	32	gR	10	UL class T
ACS380-04xx-04A8-1	R1	80	272	57	63	16	gG	40	gR	20	UL class T
ACS380-04xx-06A9-1	R1	105	357	57	63	20	gG	50	gR	20	UL class T
ACS380-04xx-07A8-1	R1	115	393	57	63	25	gG	63	gR	25	UL class T
ACS380-04xx-09A8-1	R2	135	462	63	59	32	gG	63	gR	25	UL class T
ACS380-04xx-12A2-1	R2	165	563	63	59	35	gG	63	gR	35	UL class T

3-phase U_N = 380...480 V (380, 400, 415, 440, 460, 480 V)

Drive type	Frame size	Heat dissipation *)		Air flow	Max. noise level	IEC fuses		IEC fuses		UL fuses	
		(W)	BTU/Hr	(m^3/h)	(dBA)	(A)	Fuse type	(A)	Fuse type	(A)	Fuse type
ACS380-04xx-01A8-4	R0	44	151	– *)	0	4	gG	25	gR	6	UL class T
ACS380-04xx-02A6-4	R1	55	189	57	63	6	gG	25	gR	6	UL class T
ACS380-04xx-03A3-4	R1	62	213	57	63	6	gG	25	gR	6	UL class T
ACS380-04xx-04A0-4	R1	70	240	57	63	10	gG	32	gR	10	UL class T
ACS380-04xx-05A6-4	R1	88	302	57	63	10	gG	32	gR	10	UL class T
ACS380-04xx-07A2-4	R1	108	368	57	63	16	gG	40	gR	20	UL class T
ACS380-04xx-09A4-4	R1	135	461	57	63	16	gG	40	gR	20	UL class T
ACS380-04xx-12A6-4	R2	178	609	63	59	25	gG	50	gR	25	UL class T
ACS380-04xx-17A0-4	R3	230	784	128	66	32	gG	63	gR	35	UL class T
ACS380-04xx-25A0-4	R3	344	1174	128	66	50	gG	80	gR	50	UL class T
ACS380-04xx-032A-4	R4	483	1587	150	69	63	gG	100	gR	60	UL class T
ACS380-04xx-038A-4	R4	585	1934	150	69	80	gG	125	gR	80	UL class T
ACS380-04xx-045A-4	R4	686	2281	150	69	100	gG	160	gR	100	UL class T
ACS380-04xx-050A-4	R4	757	2281	150	69	100	gG	160	gR	100	UL class T

*) Frame size R0 with free convection cooling

The miniature circuit breakers listed below are tested and approved for use with the ACS380 drives.
Other circuit breakers can also be used with the drive if they provide the same electrical characteristics.

Circuit breakers			
1-phase U_N = 200...240 V (200, 208, 220, 230, 240 V)			
Drive type	**Frame size**	**ABB miniature circuit breaker**	
		Type	**(kA)** [1]
ACS380-04xx-02A4-1	R0	S 201P-B 10 NA	5
ACS380-04xx-03A7-1	R0	S 201P-B 10 NA	5
ACS380-04xx-04A8-1	R1	S 201P-B 16 NA	5
ACS380-04xx-06A9-1	R1	S 201P-B 20 NA	5
ACS380-04xx-07A8-1	R1	S 201P-B 25 NA	5
ACS380-04xx-09A8-1	R2	S 201P-B 25 NA	5
ACS380-04xx-12A2-1	R2	S 201P-B 32 NA	5
3-phase U_N = 380...480 V (380, 400, 415, 440, 460, 480 V)			
ACS380-04xx-01A8-4	R0	S 203P-B 4	5
ACS380-04xx-02A6-4	R1	S 203P-B 6	5
ACS380-04xx-03A3-4	R1	S 203P-B 6	5
ACS380-04xx-04A0-4	R1	S 203P-B 8	5
ACS380-04xx-05A6-4	R1	S 203P-B 10	5
ACS380-04xx-07A2-4	R1	S 203P-B 16	5
ACS380-04xx-09A4-4	R1	S 203P-B 16	5
ACS380-04xx-12A6-4	R2	S 203P-B 25	5
ACS380-04xx-17A0-4	R3	S 203P-B 32	5
ACS380-04xx-25A0-4	R3	S 203P-B 50	5
ACS380-04xx-032A-4	R4	S 203P-Z 63 NA	5
ACS380-04xx-038A-4	R4	S 203P-Z 63 NA	5
ACS380-04xx-045A-4	R4	Contact ABB	–
ACS380-04xx-050A-4	R4	Contact ABB	–

[1] Maximum allowed rated conditional short-circuit current (IEC 61800-5-1) of the electrical power network.

ACS380 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.

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.

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

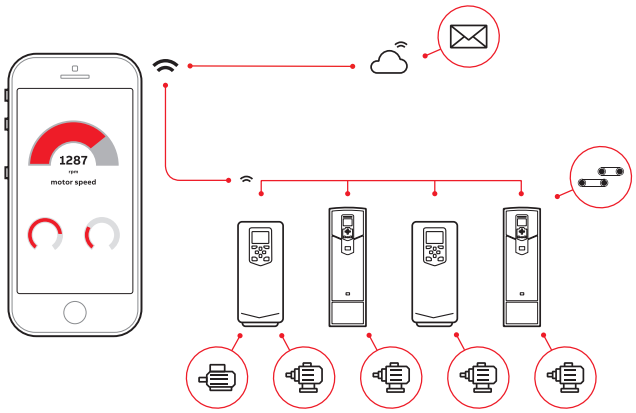
All-compatible drives portfolio
The all-compatible drives share the same architecture: software platform, tools, user interfaces and options. There is an optimal drive from the smallest water pump to the biggest cement kiln, and everything in between.

Automation Builder Engineering suite
ABB Automation Builder is the software for machine builders and system integrators wanting to automate their machines and systems in a unified and efficient way. Automation Builder connects the engineering tools for PLC, safety, control panels, SCADA, drives, motion and robots.

ABB Jokab Safety
ABB Jokab Safety is 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.

ABB Ability™ smartphone apps

Better connectivity and user experience with Drivetune



Easy and fast access to product information and support

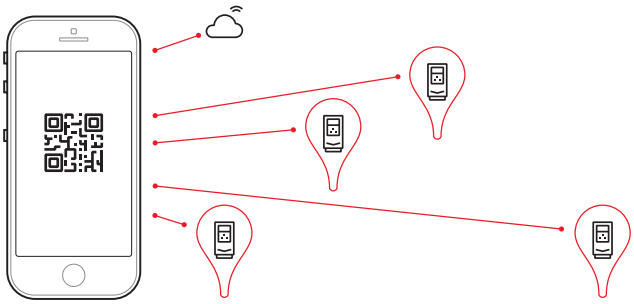
Start up, commission and tune your drive and application

Instantly access drive status and configuration with a simplified user guidance

Optimize performance via drive troubleshooting features

Create and share backups and support packages

Services and support on the go with Drivebase



Search for support documents and contacts

Access your product and service information in the cloud from anywhere

View your drives installed base and plan service activities

Use dynamic QR code to troubleshoot your drive

Report service events

Access information anywhere

Download the apps using the QR codes below or directly from the app stores

Drivetune

Drivetune for commissioning and managing drives

Drivebase

Drivebase for ensured reliability and reduced downtime on production sites

We keep your world turning

Whatever your needs are, we offer the most extensive service offering for drives, motors and generators from spare parts and technical support to cloud-based condition monitoring solutions to keep your equipment running.

The global ABB service units complemented by external Value Providers form a service network on your doorstep. Maximize performance, uptime and efficiency throughout the life cycle of your assets.

With you every step of the way
Even before you buy a generator, drive, motor, bearing or softstarter, ABB's experts are on hand to offer technical advice from dimensioning through to potential energy saving.

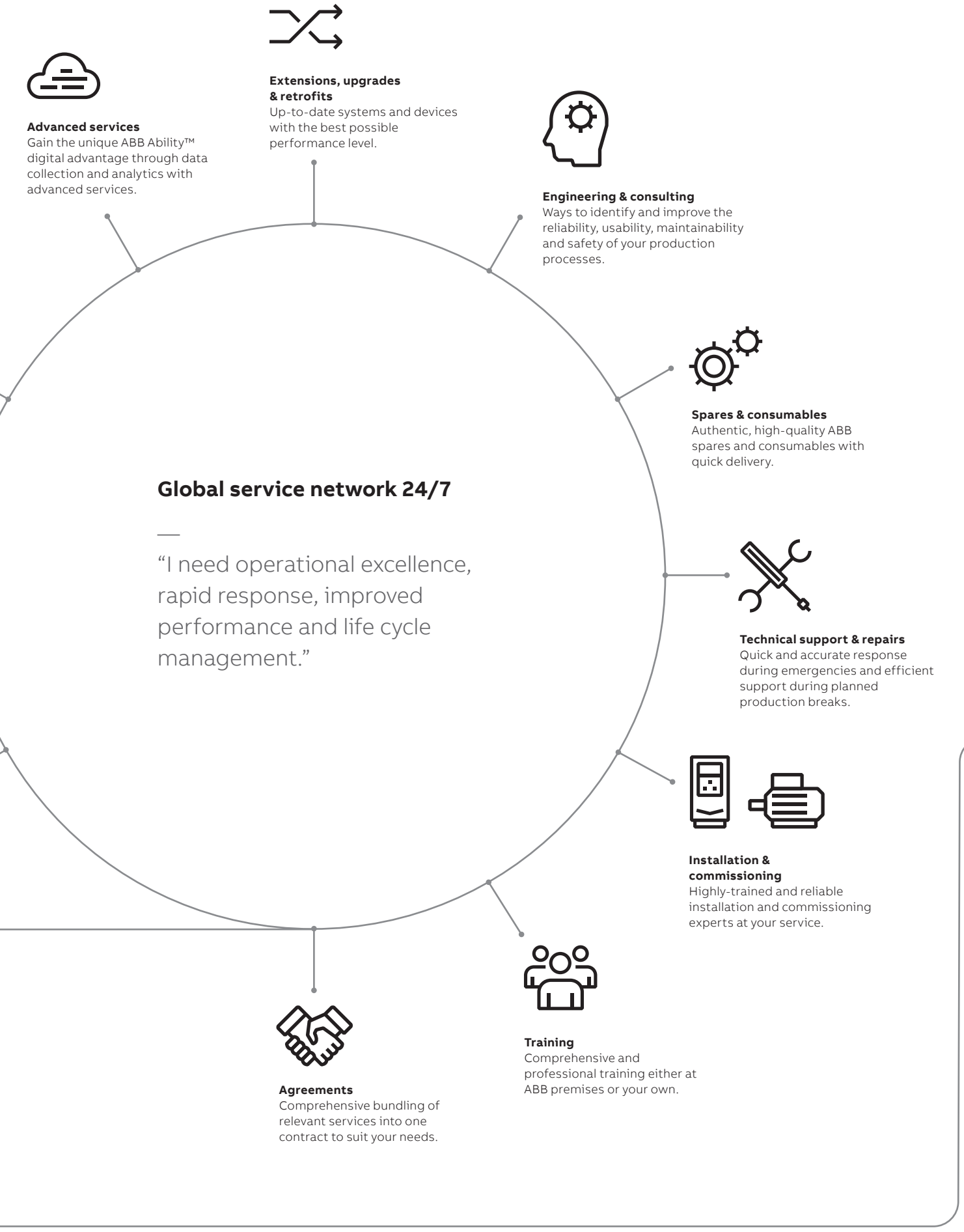
When you've decided on the right product, ABB and its global network of Value Providers can help with installation and commissioning. They are also on hand to support you throughout the operation and maintenance phases of the products life cycle, providing maintenance programs tailored to your facility's needs.

ABB will ensure you are aware of any service opportunities. If you've registered your drives and motors with ABB, then its engineers will proactively contact you advising on your most effective service options. All of which helps maximize performance, uptime and efficiency throughout the lifetime of your powertrain.

Replacements
Fast and efficient replacement services to minimize production downtime.

End-of-life services
Responsible dismantling, recycling and reusing of products, according to local laws and industrial standards.

Maintenance
Systematic and organized maintenance and support over the life cycle of your assets.



Advanced services
Gain the unique ABB Ability™ digital advantage through data collection and analytics with advanced services.

Extensions, upgrades & retrofits
Up-to-date systems and devices with the best possible performance level.

Engineering & consulting
Ways to identify and improve the reliability, usability, maintainability and safety of your production processes.

Spares & consumables
Authentic, high-quality ABB spares and consumables with quick delivery.

Technical support & repairs
Quick and accurate response during emergencies and efficient support during planned production breaks.

Installation & commissioning
Highly-trained and reliable installation and commissioning experts at your service.

Training
Comprehensive and professional training either at ABB premises or your own.

Agreements
Comprehensive bundling of relevant services into one contract to suit your needs.

Global service network 24/7

—

“I need operational excellence, rapid response, improved performance and life cycle management.”

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 AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

—

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 ACS380 website

Online manuals
for the ACS380 drives

3AUA0000187460 REV D EN 22.9.2020