

Technical data

Mains connection	
Voltage and power range	1-phase, 200 to 240 V, +10%/-15% 0.25 to 3.0 kW (1/3 to 3 HP) 3-phase, 200 to 240 V, +10%/-15% 0.25 to 15 kW (1/3 to 20 HP) 3-phase, 380 to 480 V, +10%/-15% 0.37 to 22 kW (1/2 to 30 HP)
Frequency	50/60 Hz ± 5%
Efficiency class (IEC 61800-9-2)	IE2
Common DC connection	
DC voltage level	-1 and -2 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	
Ecodesign (EU) 2019/1781	
Environmental system ISO 14001	
Waste electrical and electronic equipment directive (WEEE) 2002/96/EC	
RoHS directive 2011/65/EU	
EAC, KC, RCM	

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, 3-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, N = Base 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, 2 = 3-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®
		+K462	3AUA0000094512	FCNA-01	ControlNet™
		+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
		+K495	3AXD50000033816	BCAN-11	CANopen® (screw terminals)
	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
	Services	+P992	Pre-assembled options (front and side options)		
	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_{MAX} (A)
		I_N (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	
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	3.0	11.6	3.0	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 15 kW).

Drive type	Frame size	Nominal ratings		Light-duty use		Heavy-duty use		Max. output current I_{MAX} (A)
		I_N (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	
ACS380-04xx-02A4-2	R1	2.4	0.37	2.3	0.37	1.8	0.25	3.2
ACS380-04xx-03A7-2	R1	3.7	0.55	3.5	0.55	2.4	0.37	4.3
ACS380-04xx-04A8-2	R1	4.8	0.75	4.6	0.75	3.7	0.55	6.7
ACS380-04xx-06A9-2	R1	6.9	1.1	6.6	1.1	4.8	0.75	8.6
ACS380-04xx-07A8-2	R1	7.8	1.5	7.5	1.5	6.9	1.1	12.4
ACS380-04xx-09A8-2	R1	9.8	2.2	9.3	2.2	7.8	1.5	14.0
ACS380-04xx-12A2-2	R2	12.2	3.0	11.6	3.0	9.8	2.2	17.6
ACS380-04xx-17A5-2	R3	17.5	4.0	16.7	4.0	12.2	3.0	22.0
ACS380-04xx-25A0-2	R3	25.0	5.5	24.2	5.5	17.5	4.0	31.5
ACS380-04xx-032A-2	R4	32.0	7.5	30.8	7.5	25.0	5.5	45.0
ACS380-04xx-048A-2	R4	48.0	11.0	46.2	11.0	32.0	7.5	57.6
ACS380-04xx-055A-2	R4	55.0	15.0	52.8	15.0	48.0	11.0	86.4

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_{MAX} (A)
		I_N (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	
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	4.0	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	4.0	1.5	7.2
ACS380-04xx-07A2-4	R1	7.2	3.0	6.8	3.0	5.6	2.2	10.1
ACS380-04xx-09A4-4	R1	9.4	4.0	8.9	4.0	7.2	3.0	13.0
ACS380-04xx-12A6-4	R2	12.6	5.5	12.0	5.5	9.4	4.0	16.9
ACS380-04xx-17A0-4	R3	17.0	7.5	16.2	7.5	12.6	5.5	22.7
ACS380-04xx-25A0-4	R3	25.0	11.0	23.8	11.0	17.0	7.5	30.6
ACS380-04xx-032A-4	R4	32.0	15.0	30.5	15.0	25.0	11.0	45.0
ACS380-04xx-038A-4	R4	38.0	18.5	36.0	18.5	32.0	15.0	57.6
ACS380-04xx-045A-4	R4	45.0	22.0	42.8	22.0	38.0	18.5	68.4
ACS380-04xx-050A-4	R4	50.0	22.0	48.0	22.0	45.0	22.0	81.0

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.
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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 (IP 20 / UL open type)

Frame size	H1 (mm)	H2 (mm)	H3 (mm)	W1 (mm)	W2 (mm)	W3 (mm)	D1 (mm)	D2 (mm)	M1 (mm)	M2 (mm)	Weight (kg)
R0	205	223	170	70	86	94	176	191	50	191	1.4
R1	205	223	170	70	86	94	176	191	50	191	1.4
R2	205	223	170	95	111	119	176	191	75	191	2.0
R3	205	223	170	170	186	194	176	191	148	191	3.3
R4	205	240	170	260	276	284	181	196	234	191	5.3

H1 = Mounting surface height (back)

H2 = Height, total

H3 = Enclosure height (front)

W1 = Width without side option

W2 = Width with side option BAPO-01

W3 = Width with side options BTAC-02, BREL-01

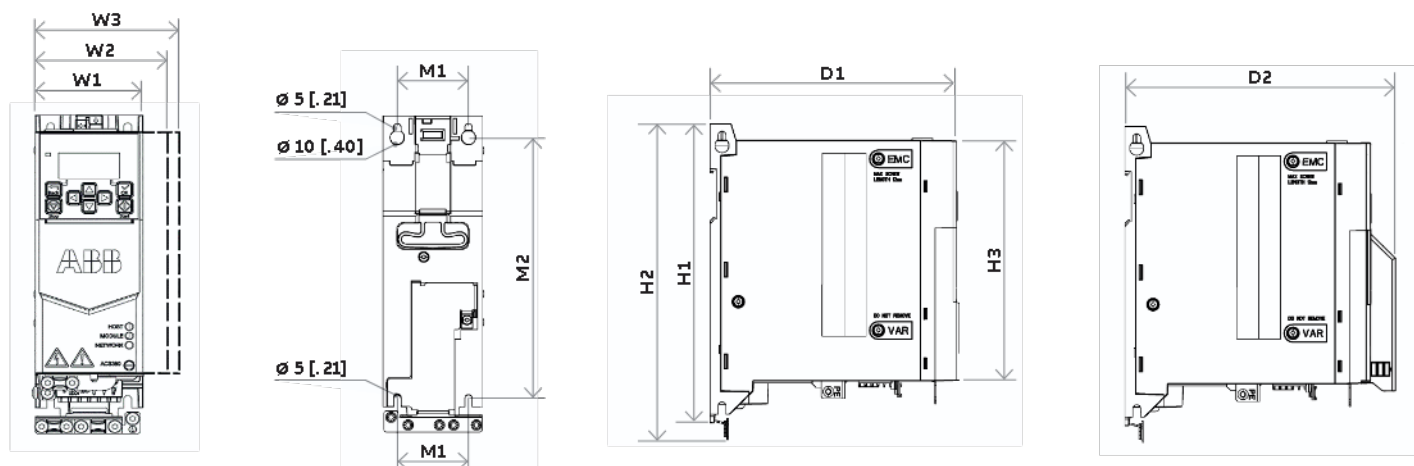
D1 = Depth

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



Dimensions and weights (drive with UL type 1 kit)

Frame size	H1 (mm)	H2 (mm)	H3 (mm)	W1 (mm)	W2 (mm)	W3 (mm)	D (mm)	M1 (mm)	M2 (mm)	Weight (kg)
R0	205	285	247	70	86	94	191	50	191	1.8
R1	205	293	247	70	86	94	191	50	191	1.8
R2	205	293	247	95	111	119	191	75	191	2.5
R3	205	329	261	170	186	194	191	148	191	4.0
R4	205	391	312	260	276	284	196	234	191	6.5

H1 = Mounting surface height (back)

H2 = Height with UL Type 1 kit, total

H3 = Height with UL Type 1 kit, enclosure (front)

W1 = Width without side option

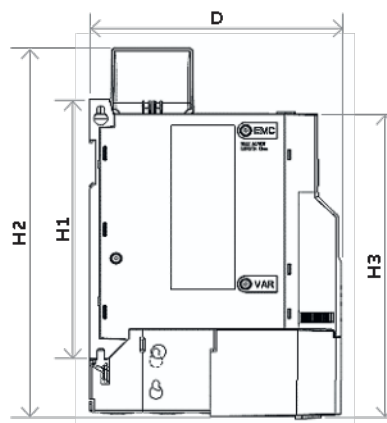
W2 = Width with side option BAPO-01

W3 = Width with side options BTAC-02, BREL-01

D = Depth

M1 = Mounting hole distance 1

M2 = Mounting hole distance 2



Construction variants

The ACS380 machinery drive comes in several variants ensuring seamless integration into machines and connecting perfectly to automation systems.

Standard variant (ACS380-04xS)

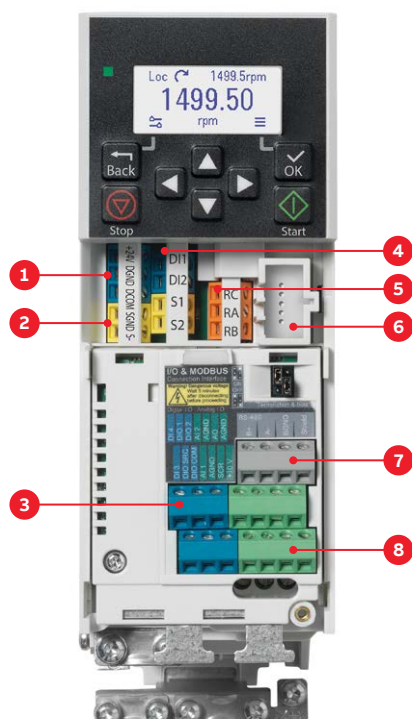
Meets the most typical machinery requirements.

A standard variant (ACS380-04xS) includes BMIO-01 module in the delivery to support Modbus RTU and a wide range of digital and analog I/O. In addition, this construction variant has one side option slot. Options are available as loose items via mrp ordering codes.

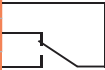
The standard variant includes:

- 4 DI + 2 DI/DO + 2 AI + 1 AO + 1 RO + STO
- Embedded Modbus RTU

Default I/O connections of the standard variant



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	
RA	
RB	
No fault [Fault (-1)]	
EIA-485 Modbus RTU	
B+	Embedded Modbus RTU (EIA-485)
A-	
BGND	
Shield	
Termination	

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



Construction variants

Configured variant (ACS380-04xC)

Simplified ordering by one single ordering code and possibility for preinstalled options.

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 includes:

- 2 DI + 1 RO + STO + one preconfigured fieldbus

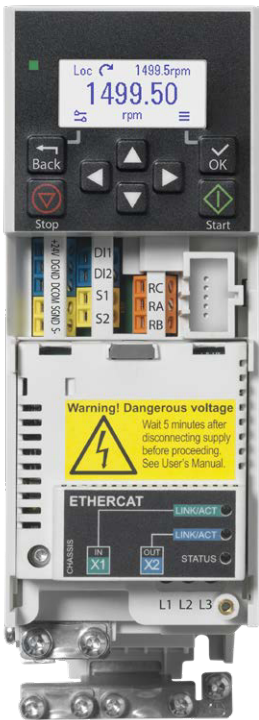
**Options ordered with the pluscode.
(See pluscodes, page 13):**

- **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 + 1 AO (BIO-01)

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.	

ACS380 configured variant (ACS380-04xC)



Base variant (ACS380-04xN)

Offers maximum flexibility with minimum stock items for varying machine building needs.

Base variant can be ordered with any of the connectivity or I/O option as loose item.

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 + 1 AO (BIO-01)

Default connections of base variant (ACS380-04xN)

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.	

ACS380 base variant (ACS380-04xN)



Control panel options and mounting kits

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.



Integrated control panel

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.

Control panel options

Ordering code	Description	Control panel
3AUA0000088311	Industrial 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

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

Door mounting and daisy chaining

Improve safety and leverage the full potential of the ACS380 control panel options with a door mounting kit and panel bus adapter.



Door mounting fosters easy operation and safety. It enables you to operate the drive without opening the cabinet door, saving time and keeping all the electronics behind the closed door. Up to 32 drives can be connected to one control panel

for even easier and quicker operation. When daisy chaining the drives, you need only one assistant control panel. The rest of the drives can be equipped with panel bus adapters and the last drive with termination plug.

Cabinet door

Control panel mounting platform

The mounting platform for the drive's control panel.

Assistant control panel

The assistant control panel can be selected with ACS380 drives. Also a Bluetooth control panel can be used.

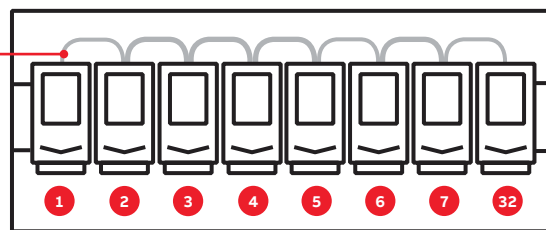


Cabinet, outside

RJ-45 cable for daisy chaining drives

With BSPL-01 Panel bus adapter and panel bus termination plug.

Panel bus adapter is required for each drive and termination plug only for the last drive.



Cabinet, inside

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.



Connection with cable

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



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.



Connection to assistant panel

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
3AJUA0000108087	Drive Composer pro PC tool (single user license)	DCPT-01
3AJUA0000145150	Drive Composer pro PC tool (10 users license)	DCPT-01
3AJUA0000145151	Drive Composer pro PC tool (20 users license)	DCPT-01
3AXD500000131976	Panel bus adapter	BSPL-01
3AXD500000128624	Panel bus termination plug	BPLG-01

Free Drive Composer entry available at
<https://new.abb.com/drives/software-tools/drive-composer>

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	Ordering code	Fieldbus protocol	Adapter module
+K451	68469341	DeviceNet™	FDNA-01
+K454	68469325	PROFIBUS DP, DPV0/DPV1	FPBA-01
+K457	68469376	CANopen®	FCAN-01
+K462	3AUA0000094512	ControlNet™	FCNA-01
+K469	3AUA0000072069	EtherCAT®	FECA-01
+K470	3AUA0000072120	Ethernet POWERLINK	FEPL-02
+K490	3AXD50000192786	Ethernet/IP™	FEIP-21
+K491	3AXD50000049964	Modbus/TCP	FMBT-21
+K492	3AXD50000192779	PROFINET IO	FPNO-21
+K495	3AXD50000033816	CANopen® (screw terminals)	BCAN-11

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.

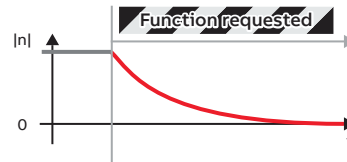
PROFIsafe safety functions module FSPS-21

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



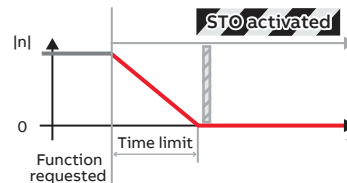
Safe Torque Off (STO)



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

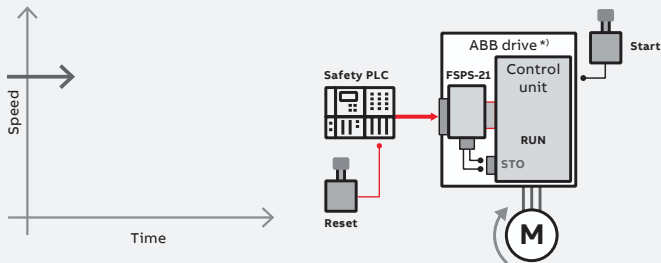
Option code	Ordering code	Module
+Q986	3AXD50000112821	FSPS-21

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

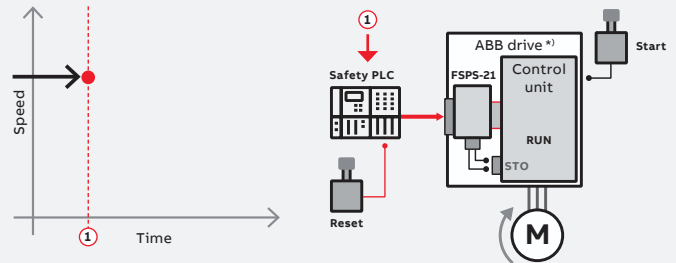
Example: SS1-t

Safety function module FSPS-21, functionality cycle

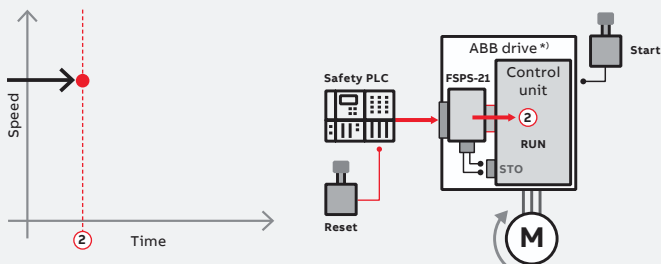
0. Drive running



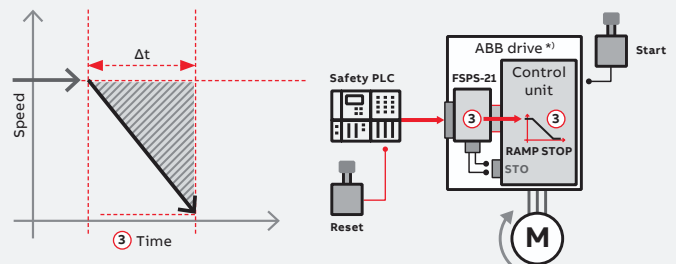
1. Safety PLC – safety function request to the FSPS-21



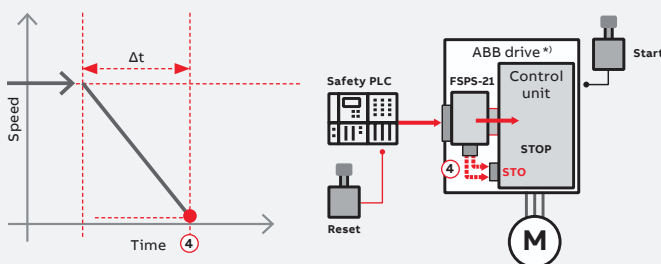
2. SS1-t, safety functions request / start of monitoring



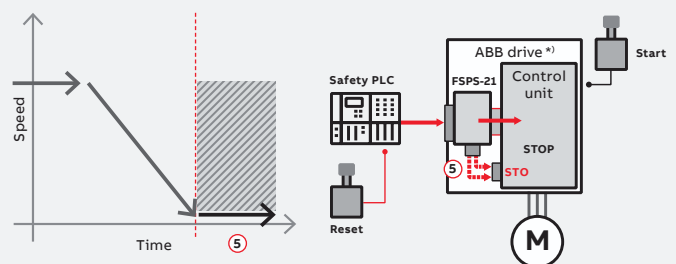
3. Transition and time monitoring of the SS1-t



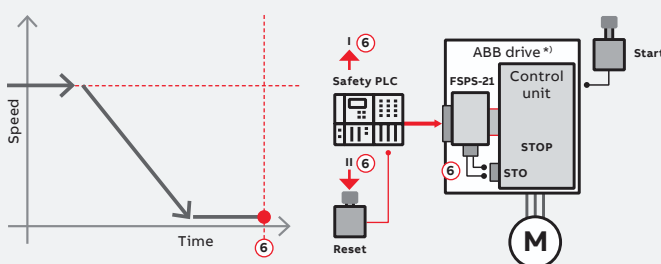
4. Zero speed or SS1-t time limit reached / STO is opened



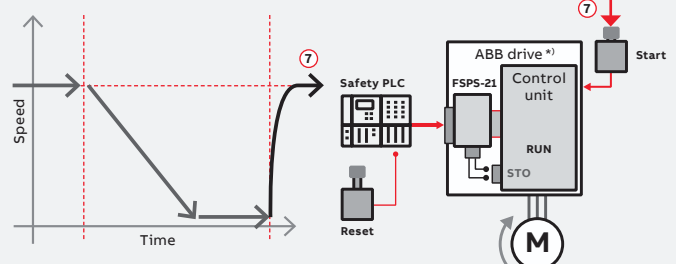
5. Safe state / STO is open



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



7. Start – return to normal operation



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

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	Ordering code	Description	Module
+L511	3AXD50000022162	External relay option, 4 x RO (side option)	BREL-01
+L515	3AXD50000191635	I/O option (front option). Can be used together with fieldbus.	BIO-01
+L534	3AXD50000022164	External 24 V DC (side option)	BAPO-01
+L535	3AXD50000022163	HTL/TTL encoder interface + External 24 V DC (side option)	BTAC-02
+L538	3AXD50000021262	I/O & Modbus extension (front option)	BMIO-01

I/O	Base unit (ACS380-04xx)	BMIO-01 (ACS380-04x5)	BIO-01	BREL-01
Inputs				
Digital inputs	2 (DI1, DI2)	4 (DI3, DI4, DIO1, DIO2)	3 (DI3, DI4, DI5)	–
Frequency inputs	–	2 (DI3, DI4)	2 (DI4, DI5)	–
Counter inputs	–	1 (DI3)	1 (DI4)	–
Analog inputs	–	2 (AI1, AI2)	1 (AI1)	–
Outputs				
Relay outputs	1 (RO1)	–	–	4 (RO4, RO5, RO6, RO7)
Digital outputs	–	2 (DIO1, DIO2)	1 (DIO1)	–
Frequency outputs	–	2 (DIO1, DIO2)	1 (DIO1)	–
Analog outputs	–	1 (AO1)	1 (AO1)	–

Note: The number of inputs and outputs depends on the configuration. For example, DIO can be configured as digital input or output.

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 higher than the minimum resistance and that 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.

Drive type	Frame size	Internal brake chopper				Example brake resistor
		R_{min} (ohm)	R_{max} (ohm)	P_{BRcont} (kW)	P_{BRmax} (kW)	Danotherm type
1-phase 230 V						
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	
3-phase 230 V						
ACS380-04xx-02A4-2	R1	39	474	0.25	0.38	CBH 360 C T 406 210R, CAR 200 D T 406 210R
ACS380-04xx-03A7-2	R1	39	319	0.37	0.56	
ACS380-04xx-04A8-2	R1	39	217	0.55	0.83	
ACS380-04xx-06A9-2	R1	39	145	0.75	1.13	CBR-V 330 D T 406 78R UL
ACS380-04xx-07A8-2	R1	39	105	1.10	1.65	
ACS380-04xx-09A8-2	R1	20	71	1.50	2.25	CBR-V 560 D HT 406 39R UL
ACS380-04xx-12A2-2	R2	20	52	2.20	3.30	
ACS380-04xx-17A5-2	R3	16	38	3.00	4.50	CBT-H 560 D HT 406 19R
ACS380-04xx-25A0-2	R3	16	28	4.00	6.00	
ACS380-04xx-032A-2	R4	3	20	5.50	8.25	CBT-V 760 G H T 282 8R
ACS380-04xx-048A-2	R4	3	14	7.50	11.25	
ACS380-04xx-055A-2	R4	3	10	11.00	16.50	
3-phase 400 V						
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	17.00	CBT-H 560 D HT 406 19R
ACS380-04xx-038A-4	R4	6	24	15.00	23.00	CBT-H 760 D HT 406 16R
ACS380-04xx-045A-4	R4	6	20	18.50	28.00	
ACS380-04xx-050A-4	R4	6	20	22.00	33.00	

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 ($P_{BRcont} \times 1.5$). 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
1 st environment, unrestricted distribution	Category C1	Group 1, Class B	Not applicable	Applicable
1 st environment, restricted distribution	Category C2	Group 1, Class A	Applicable	Not applicable
2 nd environment, unrestricted distribution	Category C3	Group 2, Class A	Not applicable	Not applicable
2 nd environment, restricted distribution	Category C4	Not applicable	Not applicable	Not applicable

EMC compliance and maximum motor cable length

Voltage (Product variant)	Frame size	EMC category (EN 61800-3), max. motor cable length		
		C1	C2	C3
		With internal / external filter		
1-phase 230 V (ACS380-04xx-xxxx-1)	R0	– / 10 m	10 m / 10 m	10 m / 10 m
	R1			
	R2			
3-phase 230 V (ACS380-04xx-xxxx-2)	R1	– / –	– / 20 m	– / 20 m
	R2			
	R3			
3-phase 400 V (ACS380-04xx-xxxx-4)	R4	– / 30 m	10 m / 30 m	30 m / 30 m
	R0			
	R1			
	R2			
	R3			

• Internal filter: C2 with ACS380-042x-xxxx-x, C3 with ACS380-040x-xxxx-4

• External filter: Please see page 29 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 230 V	>5.0 kA	>7.5 kA
3-phase 380...480 V	>5.0 kA	>10 kA

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

Drive type	Frame size	C1 filter ABB type / Schaffner type	Mains choke Max. ambient temp. 40 °C	du/dt filter Max. ambient temp. 40 °C
ACS380-04xx-02A4-1	R0	RFI-11 / FN21754-6.1-07	CHK-A1	ACS-CHK-B3
ACS380-04xx-03A7-1	R0	RFI12 / FN21754-16.1-07	CHK-B1	ACS-CHK-B3
ACS380-04xx-04A8-1	R1	RFI12 / FN21754-16.1-07	CHK-B1	ACS-CHK-B3
ACS380-04xx-06A9-1	R1	RFI12 / FN21754-16.1-07	CHK-C1	ACS-CHK-C3
ACS380-04xx-07A8-1	R1	RFI12 / FN21754-16.1-07	CHK-C1	ACS-CHK-C3
ACS380-04xx-09A8-1	R2	–	CHK-D1	ACS-CHK-C3
ACS380-04xx-12A2-1	R2	–	CHK-D1	ACS-CHK-C3

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

Drive type	Frame size	C1 filter ABB type / Schaffner type	Mains choke Max. ambient temp. 40 °C	du/dt filter Max. ambient temp. 40 °C
ACS380-04xx-02A4-2	R1	RFI 32 / FN 3258-16-44	CHK-01	–
ACS380-04xx-03A7-2	R1	RFI 32 / FN 3258-16-44	CHK-02	–
ACS380-04xx-04A8-2	R1	RFI 32 / FN 3258-16-44	CHK-03	–
ACS380-04xx-06A9-2	R1	RFI 32 / FN 3258-16-44	CHK-03	–
ACS380-04xx-07A8-2	R1	RFI 32 / FN 3258-16-44	CHK-03	–
ACS380-04xx-09A8-2	R1	RFI 32 / FN 3258-16-44	CHK-04	–
ACS380-04xx-12A2-2	R2	RFI-33 / FN 3258-30-33	CHK-04	–
ACS380-04xx-17A5-2	R3	RFI-33 / FN 3258-30-33	CHK-04	–
ACS380-04xx-25A0-2	R3	RFI-33 / FN 3258-30-33	CHK-06	–
ACS380-04xx-032A-2	R4	RFI-34 / FN3258-100-35	CHK-06	–
ACS380-04xx-048A-2	R4	RFI-34 / FN3258-100-35	CHK-07	–
ACS380-04xx-055A-2	R4	RFI-34 / FN3258-100-35	CHK-07	–

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

Drive type	Frame size	C1 filter ABB type / Schaffner type	Mains choke Max. ambient temp. 40 °C	du/dt filter Max. ambient temp. 40 °C
ACS380-04xx-01A8-4	R0	RFI 32 / FN 3258-16-44	CHK-01	ACS-CHK-B3
ACS380-04xx-02A6-4	R1	RFI 32 / FN 3258-16-44	CHK-01	ACS-CHK-B3
ACS380-04xx-03A3-4	R1	RFI 32 / FN 3258-16-44	CHK-01	ACS-CHK-B3
ACS380-04xx-04A0-4	R1	RFI 32 / FN 3258-16-44	CHK-02	ACS-CHK-C3
ACS380-04xx-05A6-4	R1	RFI 32 / FN 3258-16-44	CHK-02	ACS-CHK-C3
ACS380-04xx-07A2-4	R1	RFI 32 / FN 3258-16-44	CHK-02	NOCH0016-6x
ACS380-04xx-09A4-4	R1	RFI 32 / FN 3258-16-44	CHK-03	NOCH0016-6x
ACS380-04xx-12A6-4	R2	RFI-33 / FN 3258-30-33	CHK-03	NOCH0016-6x
ACS380-04xx-17A0-4	R3	RFI-33 / FN 3258-30-33	CHK-04	NOCH0030-6x
ACS380-04xx-25A0-4	R3	RFI-34 / FN3258-100-35	CHK-04	NOCH0030-6x
ACS380-04xx-032A-4	R4	RFI-34 / FN3258-100-35	CHK-05	NOCH0030-6x
ACS380-04xx-038A-4	R4	RFI-34 / FN3258-100-35	CHK-06	NOCH0070-6x
ACS380-04xx-045A-4	R4	RFI-34 / FN3258-100-35	CHK-06	NOCH0070-6x
ACS380-04xx-050A-4	R4	RFI-34 / FN3258-100-35	CHK-07	NOCH0070-6x

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 $U_N = 230\text{ V}$ (range 200 to 240 V)

Drive type	Frame size	Typical power loss ¹⁾		Air flow (m³/h)	Noise		IEC fuses		IEC fuses		UL fuses	
		(W)	BTU/Hr		CFM	(dBA)	(A)	Fuse type	(A)	Fuse type	(A)	Fuse type
ACS380-04xx-02A4-1	R0	33	113	– *)	–	–	10	gG	32	gR	10	UL class T
ACS380-04xx-03A7-1	R0	49	167	– *)	–	–	10	gG	32	gR	10	UL class T
ACS380-04xx-04A8-1	R1	67	229	57	33	63	16	gG	40	gR	20	UL class T
ACS380-04xx-06A9-1	R1	93	317	57	33	63	20	gG	50	gR	20	UL class T
ACS380-04xx-07A8-1	R1	106	362	57	33	63	25	gG	63	gR	25	UL class T
ACS380-04xx-09A8-1	R2	92	314	63	37	59	32	gG	63	gR	25	UL class T
ACS380-04xx-12A2-1	R2	115	392	63	37	59	35	gG	63	gR	35	UL class T

3-phase, $U_N = 230\text{ V}$ (range 200 to 240 V)

ACS380-04xx-02A4-2	R1	39	133	57	33	63	6	gG	25	gR	6	UL class T
ACS380-04xx-03A7-2	R1	57	194	57	33	63	10	gG	32	gR	10	UL class T
ACS380-04xx-04A8-2	R1	72	246	57	33	63	10	gG	32	gR	10	UL class T
ACS380-04xx-06A9-2	R1	111	379	57	33	63	16	gG	40	gR	20	UL class T
ACS380-04xx-07A8-2	R1	105	358	57	33	63	16	gG	40	gR	20	UL class T
ACS380-04xx-09A8-2	R1	140	478	57	33	63	16	gG	40	gR	20	UL class T
ACS380-04xx-12A2-2	R2	149	508	63	37	59	25	gG	50	gR	25	UL class T
ACS380-04xx-17A5-2	R3	265	904	128	75	66	32	gG	63	gR	35	UL class T
ACS380-04xx-25A0-2	R3	398	1358	128	75	66	50	gG	80	gR	40	UL class T
ACS380-04xx-032A-2	R4	350	1194	150	88	69	63	gG	100	gR	60	UL class T
ACS380-04xx-048A-2	R4	561	1914	150	88	69	100	gG	160	gR	100	UL class T
ACS380-04xx-055A-2	R4	676	2307	150	88	69	100	gG	160	gR	100	UL class T

3-phase $U_N = 400\text{ V}$ (range 380 to 480 V)

ACS380-04xx-01A8-4	R0	28	96	–	–	–	4	gG	25	gR	6	UL class T
ACS380-04xx-02A6-4	R1	44	150	57	33	63	6	gG	25	gR	6	UL class T
ACS380-04xx-03A3-4	R1	55	188	57	33	63	6	gG	25	gR	6	UL class T
ACS380-04xx-04A0-4	R1	62	212	57	33	63	10	gG	32	gR	10	UL class T
ACS380-04xx-05A6-4	R1	91	311	57	33	63	10	gG	32	gR	10	UL class T
ACS380-04xx-07A2-4	R1	100	341	57	33	63	16	gG	40	gR	20	UL class T
ACS380-04xx-09A4-4	R1	140	478	57	33	63	16	gG	40	gR	20	UL class T
ACS380-04xx-12A6-4	R2	165	563	63	37	59	25	gG	50	gR	25	UL class T
ACS380-04xx-17A0-4	R3	259	884	128	75	66	32	gG	63	gR	35	UL class T
ACS380-04xx-25A0-4	R3	390	1331	128	75	66	50	gG	80	gR	40	UL class T
ACS380-04xx-032A-4	R4	396	1351	150	88	69	63	gG	100	gR	60	UL class T
ACS380-04xx-038A-4	R4	497	1696	150	88	69	80	gG	125	gR	80	UL class T
ACS380-04xx-045A-4	R4	582	1986	150	88	69	100	gG	160	gR	100	UL class T
ACS380-04xx-050A-4	R4	672	2293	150	88	69	100	gG	160	gR	100	UL class T

¹⁾ Typical drive losses when it operates at 90% of the motor nominal frequency and 100% of the drive nominal output current.

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 $U_N = 230\text{ V}$ (range 200 to 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, $U_N = 230\text{ V}$ (range 200 to 240 V)			
ACS380-04xx-02A4-2	R1	S 203P-Z 6 NA	5
ACS380-04xx-03A7-2	R1	S 203P-Z 8 NA	5
ACS380-04xx-04A8-2	R1	S 203P-Z 10 NA	5
ACS380-04xx-06A9-2	R1	S 203P-Z 16 NA	5
ACS380-04xx-07A8-2	R1	S 203P-Z 16 NA	5
ACS380-04xx-09A8-2	R1	S 203P-Z 25 NA	5
ACS380-04xx-12A2-2	R2	S 203P-Z 25 NA	5
ACS380-04xx-17A5-2	R3	S 203P-Z 32 NA	5
ACS380-04xx-25A0-2	R3	S 203P-Z 50 NA	5
ACS380-04xx-032A-2	R4	S 203P-Z 63 NA	5
ACS380-04xx-048A-2	R4	–	–
ACS380-04xx-055A-2	R4	–	–
3-phase $U_N = 380...480\text{ V}$ (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-B 63	5
ACS380-04xx-038A-4	R4	S 803S-B 80	5
ACS380-04xx-045A-4	R4	S 803-B 100	5
ACS380-04xx-050A-4	R4	S 803-B 100	5

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