LOW VOLTAGE AC DRIVES

ABB general purpose drives

ACS580, 0.75 to 500 kW

Get it fast.
Use it easily.
Improve your processes.
ACS580: general purpose drives you can trust.

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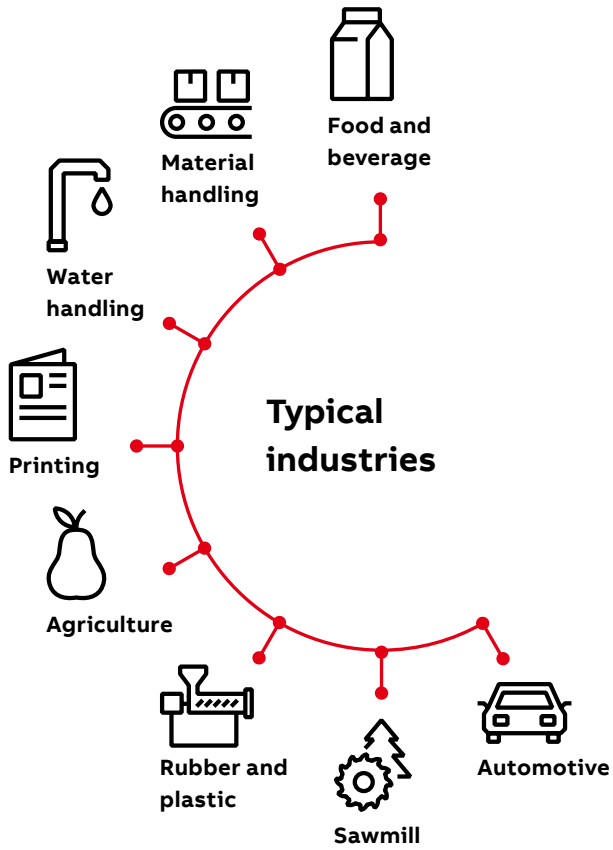
The all-compatible ACS580 series
Effortless process automation

The ACS580 is an all-compatible ABB general purpose drive, offered in a range of wall-mounted drives, drive modules and cabinet-built drives. It turns complicated to simple to control processes productively and efficiently.



One product, many applications
ACS580 drives include all the essential components for typical light industry applications, with a scalable offering from 0.75 kW to 500 kW. The drive is ready to control compressors, conveyors, mixers, pumps and fans, as well as many other variable and constant torque applications. The all-compatible drives family ensures that you will always find the best drive for your needs. These drives share similar user interface and PC tools, making using and learning them fast and easy.

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The drive controls a wide range of applications in different industries, and yet it requires very little setting up or commissioning.

Reliability and consistent high quality
ACS580 drives are designed for customers who value high quality and robustness in their applications. The product features, such as coated boards and compact IP55 enclosure, make the ACS580 suitable also for harsh conditions. Additionally, all ACS580 drives are tested at maximum temperature and with nominal loads. The tests include performance and all protective functions.

Easier than ever before
ACS580 drives have all the essential features built-in reducing the commissioning and setup time. The assistant control panel with multiple language choices is standard in ACS580 drives. Users can also upgrade to an optional Bluetooth control panel for wireless commissioning and monitoring. Primary settings and application control macros ensure quick product setup.

Instant availability
ACS580 products are available from central stocks around the world for immediate delivery up to 500 kW. The product is also widely available from ABB distributors globally.


ABB
Remote
ACS580
35.4 Hz
Output frequency
Hz
35.36
Motor current
A
9.52
Output power
kW
3.01
Options
01:33
Menu
?
Stop
Loc/Rem
Start

Easily take full control of your processes to comprehensively manage your plant

ACS580 drives are equipped with built-in features that simplify ordering and delivery, and reduce commissioning costs. Everything is provided in a single, compact and ready-to-use package for you to take full control of your processes.

Startup and maintenance tool
Drive composer PC tool for startup, configuration, monitoring and process tuning. The PC tool is connected to the drive's control panel via a USB interface.

Simple to select, install and use
Built-in features such as an EMC filter, choke, a Modbus RTU fieldbus interface and safe torque off functionality simplify drive selection, installation and use.

Simplicity at your fingertips as standard
The control panel's straightforward primary settings menu with assistants help you set up the drive quickly and effectively.

Scalable performance
The ACS580 is a perfect match not only for energy-aware applications, but also for applications where sophisticated speed and torque control are needed.

Effortless automation and productivity for your success

Communication with all major automation networks
Optional fieldbus adapters enable connectivity with all major industrial automation networks.

Reliable, integrated safety
The ATEX-certified thermistor protection module option CPTC-02 provides enhanced process safety and easy, simplified installation.

Adaptive programming
Adaptive programming is ideal for creating simple programs for various applications to further optimize the process control. It does not require expertise in programming.

Designed for maximum reliability
Design features like coated circuit boards, minimized airflow through the control board section, earth fault protection make the ACS580 a safe choice for multiple applications.

Remote monitoring
A built-in web server and stand-alone datalogger NETA-21 module enable worldwide and secure access to drives.

Typical industries and applications

ACS580 drives improve process performance, increase productivity, reduce external components and ensure machine and personnel safety

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01 Food and beverage

02 Material handling

03 Printing

04 Rubber and plastics

05 Textile

06 Sawmill

07 Water handling

08 Agriculture

09 Automotive

Streamline your processes for profitable growth

Industry	Application	Customer benefits
Food and beverage 	Blowers, centrifuges, compressors, conveyors, fans, mills, pumps, separators, mixers, dryers, pelletizers	• Accurate control of the process increases the speed of food production while saving energy and improving work safety. Precise speed and torque control increases production uptime even when the load varies. • Increased starting torque with boost function allows the same drive series to be used in different applications in the manufacturing plant. • Safe torque off (SIL 3) function ensures machine and personnel safety. • The easy-to-use control panel with multiple languages and robust design reduce the time needed for maintenance. • The ATEX-certified thermistor protection module meets the safety requirements even in dusty environments.
Material handling 	Conveyors	• Accurate and precise speed and torque control increase production uptime even when the load varies. • Safe torque off (SIL 3) function ensures machine and personnel safety. • Minimized downtime with robust and reliable design. • Swinging choke technology to mitigate harmonics. • External +24 V supply to keep the communication up when the mains supply is disconnected.
Printing 	Compressors, presses, winders	• Smooth acceleration to prevent breaking the paper. • The robust design of the drive reduces mechanical stress on process line equipment, lowering maintenance costs and capital expenditure. • Precise speed and torque control of applications increases process uptime by optimizing motor control.
Rubber and plastics 	Extruders, injection molding machines, pumps	• Smooth acceleration to prevent breaking the web of plastic film. • The scalable all-compatible platform allows easy process and component optimization with different drive types that share the same user interface and tools. • Wide range of supported fieldbus protocols for easy PLC integration.
Textile 	Bleaching machines, compressors, conveyors, drum washers, extruders, fans, jet dyeing machines, pumps, stenter machines, stretchers, winders	• Precise speed or torque control for high stretching accuracy and better quality of the end product. • Adjustable torque limit to prevent damage to mechanical equipment. • Adjustable acceleration/deceleration ramps to improve pump control. • Real-time clock and timed functions for process optimization. • Increased productivity and faster payback times with multiple setups, allowing production of two different products. • Built-in counters for additional energy savings and preventive maintenance.
Sawmill 	Chippers, conveyors, feeders, dryers, pickers, drying kilns	• IP55/UL type 12 available up to 250 kW for harsh environments. • Cabinet-built drive IP54 up to 500 kW. • Safe torque off (SIL 3) function ensures machine and personnel safety. • External +24 V supply to keep the communications "alive" when the mains supply is turned off. • ATEX-certified thermistor protection module.
Water handling 	Compressors, pump stations	• Additional energy savings with energy optimizer function. • Adjustable acceleration/deceleration ramps to improve pump control. • Minimized downtime with robust and reliable design. • ABB's extensive product and service offering for comprehensive process optimization.
Agriculture 	Fans, irrigators, pumps, sorters	• IP55/UL 12 available up to 250 kW harsh environments. • Wall-mounted power range up to 250 kW. • Drive modules and cabinet-built drives up to 500 kW.
Automotive 	Conveyors, fans, pumps	• ATEX-certified thermistor protection module. • Increased productivity and faster payback times with multiple setups. • Enhanced quality of end products with smooth control of the motor and process. • Safe torque off (SIL 3) function ensures machine and personnel safety. • Wide range of fieldbus networks supported, including PROFIBUS and PROFINET IO. • P55/UL Type 12 available up to 250 kW 400 V and high enclosure rating for harsh environments. • The robust design of the drive reduces mechanical stress on process line equipment, lowering maintenance costs and ensuring high production quality.

Complete offering, from wall-mounted drives to cabinet installations

Powerful, rugged and robust ACS580 drives bring you ease of use, scalability and quality. A wide power range and various mounting options and enclosure classes ensure you will find a drive for your installation and environment needs.

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01 Wall-mounted ACS580 IP21 drive
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02 Wall-mounted ACS580 IP55 drive
—
03 Flange-mounted ACS580 IP21 drive
—
04 ACS580 drive module with IP00
—
05 Cabinet-built ACS580 drive with IP42

Wall-mounted IP21 drives, standard
Wall-mounted IP21 drives are available in a power and voltage range from 0.75 to 250 kW and 3-phase 380-480 V. Side-by-side mounting, flange mounting and horizontal mounting are all available for wall-mounted ACS580 drives.

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Wall-mounted IP55 drives, +B056
The IP55 drive is designed for applications exposed to dust, moisture, vibrations and other harsh environments. It is similar in size to the compact IP21 drives, which provides significant savings in space, maintenance, engineering, and material costs, as well as in setup and commissioning time.

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IP20 drives without a conduit box for cabinet installations, +P944
The option code +P944 removes the conduit box from the frames R5-R9, making it easier to install the drive in compact cabinets with limited space. These IP20 units enable you to optimize the solution from cost and dimensioning point of view, and reduce waste. This option is also compatible with the flange mounting option for the frames R5-R9.

Flange mounting option, +C135
The flange mounting option enables smaller cabinets to be used as the backside of the drive is installed outside of the cabinet. This mounting method improves the cooling system and decreases the investment in the cabinets.
The flange mounting option is compatible only with the standard IP21 units. It maintains the protection class of IP55 on the backside of the drive, while the front side of the drive is IP20.
The option is also available as a loose item with an MRP code. If necessary, the conduit box can be removed from the frames R5-R9 with an option code +P944.

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Flange mounting kit MRP codes	Frame size
3AXD50000105311	R1 (IP21)
3AXD50000105328	R2 (IP21)
3AXD50000105335	R3 (IP21)
3AXD50000031460	R4 (IP21)
3AXD50000031461	R5 (IP21)
3AXD50000018852	R6 (IP21)
3AXD50000018853	R7 (IP21)
3AXD50000018854	R8 (IP21)
3AXD50000018855	R9 (IP21)

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Drive modules for cabinet installations, IP00 and IP21
ACS580 drive modules are optimal for system integrators, cabinet builders or OEMs who want to optimize the cabinet design in the 250-500 kW range, but do not want to compromise on easy installation, commissioning and maintenance.

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Cabinet-built drives, IP21, IP42 and IP54
Cabinet-built drives are available with IP21 protection class as standard and IP42 and IP54 as options in frame sizes R6 to R11. The drives have a unique cooling arrangement even for harsh environments and a global cabinet design with a high quality standard. The power range is from 75 kW to 500 kW, and the voltage range is 3-phase 380-480 V.

Common features throughout the whole ACS580 product family

Standard ACS580 features

Choke and EMC
- Swinging choke technology mitigates harmonics
- Fulfills standard the EN61000-3-12 standard
- EMC C2 filter for R1-R9 allows safe installation in first environment
- EMC C3 and common mode filter for R10 and R11 allow safe installation in second environment
- Optional EMC C1 filter for R1-R5 ensures the best electro-magnetic performance for first environment

Scalar and vector control for process control
- Scalar control for effortless process control
- Vector control for accurate speed and torque control in demanding applications
- Support for induction, permanent magnet and synchronous reluctance motors (SynRM)

Extensive I/O connections
- The ACS580 features extensive I/O connections for flexible configuration in various applications
- Colored and bigger terminals for easy commissioning and diagnostics

Assistant control panel and primary settings
- The ACS-AP-S assistant control panel speaks your language
- USB interface for PC and tool connection
- Help button for problem-solving and immediate diagnostic

Integrated safe torque off (STO)
- Safe torque off for implementing safe machinery
- SIL 3, PL e

Brake chopper
- The brake chopper is built-in as standard for ACS580 frames up to R3. Braking control is integrated into ACS580 drives.
- Optional external brake chopper can be added for the frames R4-R9.

Performance
The ACS580 is suitable for various types of applications, including constant torque, linear and variable torque applications.

Shared features of the ABB all-compatible drives portfolio

Same user interface
The drives follow the same operation logic and yet, there is an optimal drive from the smallest water pump to the biggest cement kiln, and everything in the between. When you have learned to use one drive it is easy to use other drives in the portfolio.

Same PC tools
Free Drive Composer entry available at www.abb.com.

Same parameter structure makes the all-compatible platform easy to use.

Simple connectivity
- The ACS580 supports F-series fieldbus adapters used in the ABB all-compatible platform
- Mobile phone connectivity via the optional Bluetooth assistant control panel
- Fieldbus settings are made easy with the redesigned simple settings menu

Standard ACS580 drives software with versatile features

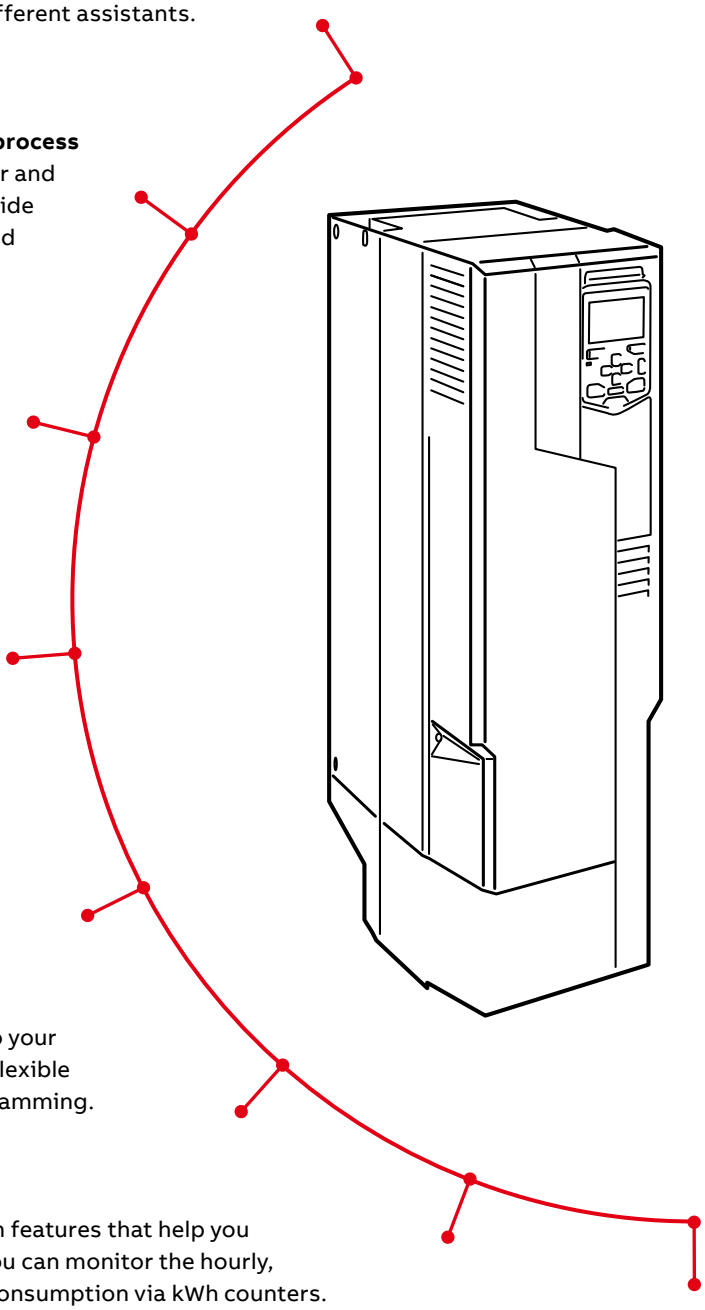
Save commissioning and learning time with the assistant control panel's clear and intuitive user interface and different assistants.

Improve the performance of the motor and process with sophisticated process control in scalar and vector control modes. The drive supports a wide range of motors, including induction and permanent magnet motors.

Analyze and optimize the application with the load profile log, which shows you how the drive is operating.

Reduce motor noise with spreading the switching frequencies over a user-specified range.

Reduce costs with the built-in and standalone process PID. It makes the ACS580 a self-governing unit requiring only an external process measurement. No external logic input from the control room is needed.



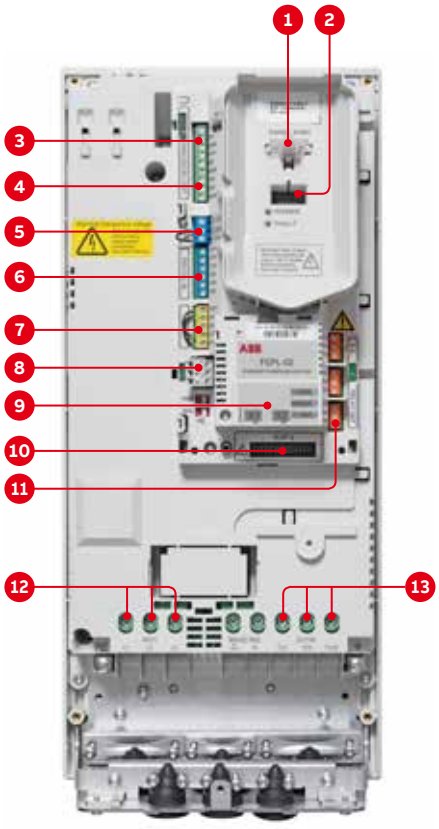
Scale up and customize the drive to your application's requirements with flexible parameter pointers or adaptive programming.

Optimize energy efficiency with features that help you to save and manage energy. You can monitor the hourly, daily and cumulative energy consumption via kWh counters.

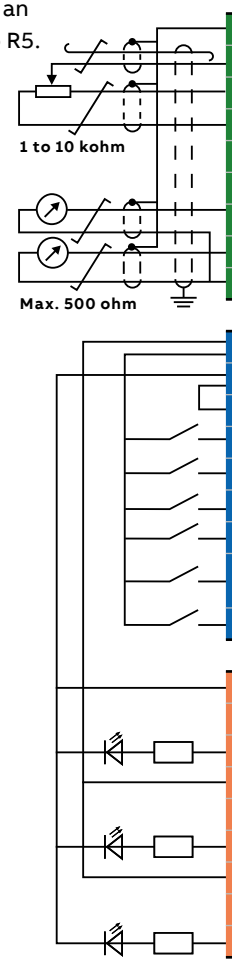
Analyze and resolve issues with the control panel's diagnostics menu. You can quickly analyze why the drive is performing as it is; running, stopped or running at the present speed.

Standard interface and extensions for plug-in connectivity

ACS580 drives offer a wide range of standard interfaces. In addition, the drive has two option slots that can be used for extensions, including fieldbus adapters and input/output extension modules that allow an external +24 V supply with frame sizes R1 to R5. For frames R6-R11 external +24 V terminals are already integrated on the control board. For further information, please see the ACS580 user manual.



1. Panel port (PC tools, control panel)
2. ABB drive customizer port for programming the drive without mains
3. Analog inputs (2 × AI)
4. Analog outputs (2 × AO)
5. 24 V AC/DC output
6. Digital inputs (6 × DI)
7. Safe torque off (STO)
8. Embedded fieldbus
9. Communication options (fieldbuses)
10. I/O extensions
11. Relay outputs (3 × RO)
12. Mains connection
13. Motor connection



Default factory I/O connection diagram: Macro ABB standard

Terminal	Meaning	Default macro connections
XI	**Reference voltage and analog inputs and outputs**	
1	SCR	Signal cable shield (screen)
2	AI1	External frequency reference 1: 0 to 10 V
3	AGND	Analog input circuit common
4	+10 V	Output reference voltage 10 V DC
5	AI2	Not used
6	AGND	Analog input circuit common
7	AO1	Output frequency: 0 to 20 mA
8	AO2	Output current: 0 to 20 mA
9	AGND	Analog output circuit common
X2 & X3	**Aux. voltage output and programmable digital inputs**	
10	+24 V	Auxiliary voltage output +24 V DC
11	DGND	Auxiliary voltage output common
12	DCOM	Digital input common for all DI
13	DI1	Start/Stop: Activate to start
14	DI2	Fwd/Rev: Activate to reverse rotation direction
15	DI3	Constant speed selection
16	DI4	Constant speed selection
17	DI5	Ramp pair selection: Activate to select second pair
18	DI6	Not used
X6, X7, X8	**Relay outputs**	
19	RO1C	Ready
20	RO1A	250 V AC/30 V DC
21	RO1B	2 A
22	RO2C	Running
23	RO2A	250 V AC/30 V DC
24	RO2B	2 A
25	RO3C	Fault (-1)
26	RO3A	250 V AC/30 V DC
27	RO3B	2 A
X5	**EIA-485 Modbus RTU**	
29	B+	Built-in Modbus RTU fieldbus interface
30	A-	
31	DGND	
X4	**Safe torque off**	
34	OUT1	Safe torque off. Both circuits must be closed for the drive to start. The circuits are closed with jumper wires in the standard delivery.
35	OUT2	
36	SGND	
37	IN1	
38	IN2	
X10 *)	**24 V AC/DC**	
40	24 V	AC/DC-in. Ext. 24 V AC/DC input to power up the control unit when the main supply is disconnected
41	24 V	AC/DC+in.

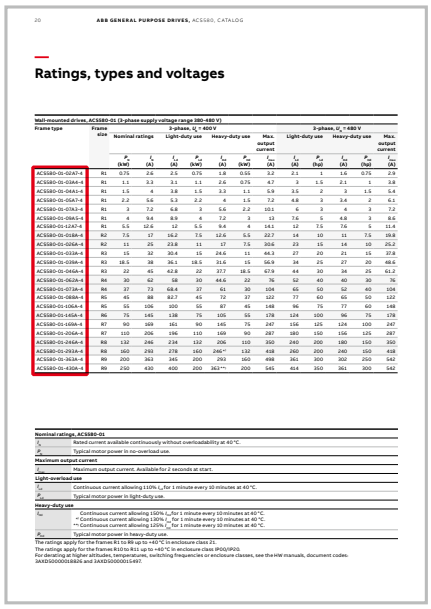
*) The terminals 40-41 are integrated only in the frame sizes R6-R11. For the frame sizes R1-R5 I/O options (+L) are needed.

How to select a drive

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

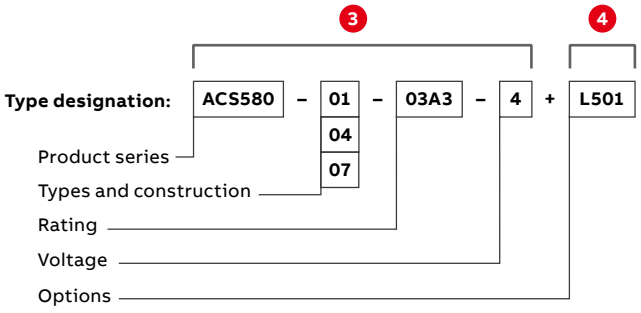
Start by identifying your supply voltage. Based on the supply voltage, follow either the right side or the middle section of the rating table. See pages 20, 21 and 22.

Select your drive's order code from the rating table based on your motor's nominal power rating.

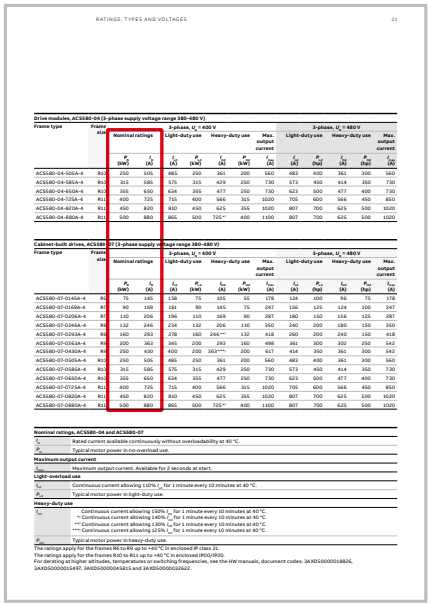


Pages 20, 21 and 22

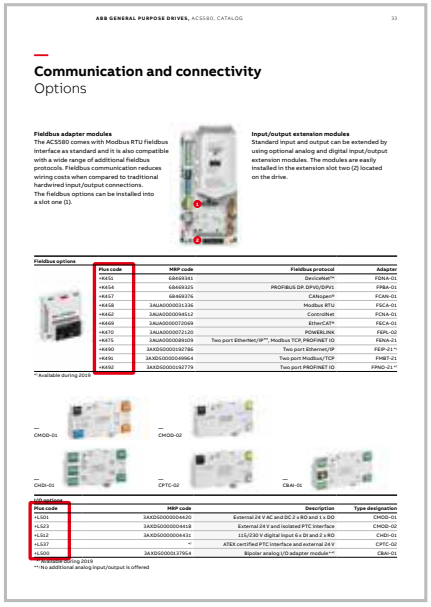
Choose your options (on pages 26, 28 and 33) and add the option codes to the drive's order code. Remember to use a "+" mark before each option code or order them as loose items. For more information, see pages 53, 54, and 55.



Choose your motor's power and current rating from the rating table on pages 20, 21 and 22.



Pages 20, 21, 22 and 23



Pages 26, 28 and 33

Technical data

Mains connection	
Input voltage and output power range	3-phase, U_N 380 to 480 V, +10%/-15% ACS580-01: from 0.75 up to 250 kW ACS580-04: from 250 up to 500 kW ACS580-07: from 75 up to 500 kW Auto-identification of supply voltage
Frequency	from 47 to 63 Hz
Power factor	cosφ = 0.98
Efficiency (at nominal power)	98%
Motor connection	
Voltage	3-phase, from 0 to supply voltage
Frequency	0 to 500 Hz
Motor control	Scalar and vector control
Torque control	Torque step rise time: <10 ms with nominal torque Non-linearity: ± 5% with nominal torque
Speed control	Static accuracy: 20% of motor nominal slip Dynamic accuracy: 1% seconds with 100% torque step
Maximum recommended motor cable length	R1: 100 m R2: 200 m R3-R11: 300 m

Product compliance

CE
Low Voltage Directive 2014/34/EU, EN 61800-5-1: 2007
Machinery Directive 2006/42/EC, EN 61800-5-2: 2007
EMC Directive 2014/30/EU, EN 61800-3: 2004 + A1: 2012
RoHS directive 2011/65/EU
Quality assurance system ISO 9001 and Environmental system ISO 14001
Waste electrical and electronic equipment directive (WEEE) 2002/96/EC
RoHS directive 2011/65/EU
UL, EAC, RCM, UL, cUL
TÜV Nord (safety functions)

EMC according to EN 61800-3:2004 + A1:2012

Frames R1 to R9 with built-in C2 category filter as standard
Frames R10 and R11 with preconfigured built-in C3 category filter option

Environmental limits	
Ambient temperature	
Transport Storage	-40 to +70 °C -40 to +70 °C
Operation area	ACS580-01: -15 to +50 °C. No frost allowed R1 to R9 from +40 to +50 °C with derating ACS580-04: -15 to +55 °C. No frost allowed R10 to R11 from +40 to +55 °C with derating ACS580-07: 0 to +40 °C. No frost allowed R6 to R11 from +40 to +50 °C with derating
Cooling method Air-cooled	 Dry clean air
Altitude 0 to 1,000 m 1,000 to 4,000 m	 Without derating With derating of 1%/100 m For more detailed information please see the ACS580 hardware manual
Relative humidity	5 to 95%, no condensation allowed
Degree of protection	ACS580-01: IP21 as standard. IP55 as option (frames R1 to R9) ACS580-04: IP00 as standard. IP20 as option (frames R10 to R11) ACS580-07: Cabinet-built frames R6 to R11: IP21 as standard. IP42 and IP54 as options
Functional safety	Safe torque off (STO according EN 61800-5-2) IEC 61508 ed2: SIL 3. IEC 61511: SIL 3. IEC 62061: SIL CL 3. EN ISO 13849-1: PL e
Contamination levels	No conductive dust allowed
Storage	IEC 60721-3-1. Class 1C2 (chemical gases). Class 1S2 (solid particles) *)
Operation	IEC 60721-3-3. Class 3C2 (chemical gases). Class 3S2 (solid particles) *)
Transportation	IEC 60721-3-2. Class 2C2 (chemical gases) Class 2S2 (solid particles) *)

*) C = Chemically active substances
S = Mechanically active substances

Dimensions

ACS580-01 IP21, standard

Frames	Height 1		Height 2		Width		Depth		Weight	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(kg)	(lb)
R1	403	15.9	333	13.0	125	4.9	223	8.8	4.6	10.1
R2	503	19.8	433	17.0	125	4.9	229	9.0	6.5	14.6
R3	490	19.3	490	19.3	203	8.0	229	9.0	11.8	26.0
R4	636	25.0	636	25.0	203	8.0	258	10.2	19	41.9
R5	732	28.8	596 *)	23.5	203	8.0	295	11.6	28.3	62.4
R6	727	28.6	548 *)	21.6	252	9.9	369	14.5	42.4	93.5
R7	880	34.6	600 *)	23.7	284	11.2	370	14.6	54	119.1
R8	965	38.0	680 *)	26.7	300	11.8	393	15.5	69	152.2
R9	955	37.6	680 *)	26.8	380	15.0	418	16.5	97	213.9

Height 1: Total height of the drive with glandbox
Height 2: Total height of the drive without glandbox
*) Height with the option +P944

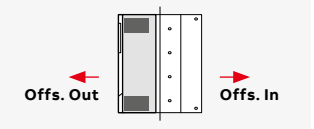
ACS580-01 IP55, +B056

Frames	Height 1		Height 2		Width		Depth		Weight	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(kg)	(lb)
R1	403	15.9	403	15.9	128	5.0	233	9.2	4.8/5.4	10.6/11.2
R2	503	19.8	503	19.8	128	5.0	239	9.4	6.8/7.4	15.0/16.3
R3	490	19.3	733	28.9	206	8.1	237	9.3	13/15	28.7/33.1
R4	636	23.6	879	34.6	203	8.0	265	10.2	20/23.3	44.1/51.4
R5	732	28.8	1023	40.3	203	8.0	320	12.6	29/33	64.0/72.8
R6	727	28.6	–	–	252	9.9	380	15.0	43	94.8
R7	880	34.6	–	–	284	11.2	381	15.0	56	123.5
R8	965	38.0	–	–	300	11.8	452	17.8	77	169.8
R9	955	37.6	–	–	380	15.0	477	18.78	103	227.1

Height 1: Total height of the drive
Height 3: Total height of the drive with options +F287, +F316, +E223
Note: Options +F287, +F316, +E223 are available only for the IP55 frames R1-R5

ACS580-01 flange mounting dimensions, with +C135 or a loose option kit for IP21

Frames	Height		Width		Offs. Out		Offs. In		Weight	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(kg)	(lb)
R1	461	18.2	206	8.1	133	5.2	109	4.3	4.6	10.1
R2	551	21.7	206	8.1	130	5.1	114	4.5	6.5	14.6
R3	613	24.1	290	11.4	118	4.6	116	4.6	11.8	26.0
R4	776	30.6	290	11.4	120	4.7	137	5.4	19	41.9
R5	776	30.6	290	11.4	124	4.9	173	6.8	28.3	62.4
R6	672	26.5	374	14.7	193	7.6	167	6.6	42.4	93.5
R7	722	28.4	406	16.0	194	7.6	169	6.7	54	119.1
R8	814	32.1	433	17.0	202	8.0	184	7.2	69	152.2
R9	804	31.7	502	19.8	204	8.0	209	8.2	97	213.9



ACS580-04 IP00, standard

Frames	Height		Width		Depth		Weight	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(kg)	(lb)
R10	1462	57.6	350	13.8	529	20.8	162	357.2
R11	1662	63.4	350	13.8	529	20.8	200	440.9

ACS580-04 IP20, +B051

Frames	Height		Width		Depth		Weight	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(kg)	(lb)
R10	1462	57.6	350	13.8	529	20.8	162	357.2
R11	1662	63.4	350	13.8	529	20.8	200	440.9

ACS580-07 IP21, standard

Frames	Height		Width		Depth		Weight	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(kg)	(lb)
R6	2145	84.4	430	16.9	673	26.5	210	463
R7	2145	84.4	430	16.9	673	26.5	220	485
R8	2145	84.4	530	20.9	673	26.5	255	562
R9	2145	84.4	530	20.9	673	26.5	275	606
R10	2145	84.4	830	32.7	698	27.5	535	1179
R11	2145	84.4	830	32.7	698	27.5	581	1280

ACS580-07 IP42, +B054

Frames	Height		Width		Depth		Weight	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(kg)	(lb)
R6	2145	84.4	430	16.9	673	26.5	210	463
R7	2145	84.4	430	16.9	673	26.5	220	485
R8	2145	84.4	530	20.9	673	26.5	255	562
R9	2145	84.4	530	20.9	673	26.5	275	606
R10	2145	84.4	830	32.7	698	27.5	535	1179
R11	2145	84.4	830	32.7	698	27.5	581	1280

ACS580-07 IP54, +B055

Frames	Height		Width		Depth		Weight	
	(mm)	(in)	(mm)	(in)	(mm)	(in)	(kg)	(lb)
R6	2145	84.4	430	16.9	673	26.5	210	463
R7	2145	84.4	430	16.9	673	26.5	220	485
R8	2145	84.4	530	20.9	673	26.5	255	562
R9	2145	84.4	530	20.9	673	26.5	275	606
R10	2145	84.4	830	32.7	698	27.5	535	1179
R11	2145	84.4	830	32.7	698	27.5	581	1280

Ratings, types and voltages

Wall-mounted drives, ACS580-01 (3-phase supply voltage range 380-480 V)

Frame type	Frame size	3-phase, U_N = 400 V							3-phase, U_N = 480 V				
		Nominal ratings		Light-duty use		Heavy-duty use		Max. output current	Light-duty use		Heavy-duty use		Max. output current
		P_N (kW)	I_N (A)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	I_{max} (A)	I_{Ld} (A)	P_{Ld} (hp)	I_{Hd} (A)	P_{Hd} (hp)	I_{max} (A)
ACS580-01-02A7-4	R1	0.75	2.6	2.5	0.75	1.8	0.55	3.2	2.1	1	1.6	0.75	2.9
ACS580-01-03A4-4	R1	1.1	3.3	3.1	1.1	2.6	0.75	4.7	3	1.5	2.1	1	3.8
ACS580-01-04A1-4	R1	1.5	4	3.8	1.5	3.3	1.1	5.9	3.5	2	3	1.5	5.4
ACS580-01-05A7-4	R1	2.2	5.6	5.3	2.2	4	1.5	7.2	4.8	3	3.4	2	6.1
ACS580-01-07A3-4	R1	3	7.2	6.8	3	5.6	2.2	10.1	6	3	4	3	7.2
ACS580-01-09A5-4	R1	4	9.4	8.9	4	7.2	3	13	7.6	5	4.8	3	8.6
ACS580-01-12A7-4	R1	5.5	12.6	12	5.5	9.4	4	14.1	12	7.5	7.6	5	11.4
ACS580-01-018A-4	R2	7.5	17	16.2	7.5	12.6	5.5	22.7	14	10	11	7.5	19.8
ACS580-01-026A-4	R2	11	25	23.8	11	17	7.5	30.6	23	15	14	10	25.2
ACS580-01-033A-4	R3	15	32	30.4	15	24.6	11	44.3	27	20	21	15	37.8
ACS580-01-039A-4	R3	18.5	38	36.1	18.5	31.6	15	56.9	34	25	27	20	48.6
ACS580-01-046A-4	R3	22	45	42.8	22	37.7	18.5	67.9	44	30	34	25	61.2
ACS580-01-062A-4	R4	30	62	58	30	44.6	22	76	52	40	40	30	76
ACS580-01-073A-4	R4	37	73	68.4	37	61	30	104	65	50	52	40	104
ACS580-01-088A-4	R5	45	88	82.7	45	72	37	122	77	60	65	50	122
ACS580-01-106A-4	R5	55	106	100	55	87	45	148	96	75	77	60	148
ACS580-01-145A-4	R6	75	145	138	75	105	55	178	124	100	96	75	178
ACS580-01-169A-4	R7	90	169	161	90	145	75	247	156	125	124	100	247
ACS580-01-206A-4	R7	110	206	196	110	169	90	287	180	150	156	125	287
ACS580-01-246A-4	R8	132	246	234	132	206	110	350	240	200	180	150	350
ACS580-01-293A-4	R8	160	293	278	160	246 *)	132	418	260	200	240	150	418
ACS580-01-363A-4	R9	200	363	345	200	293	160	498	361	300	302	250	542
ACS580-01-430A-4	R9	250	430	400	200	363 **)	200	545	414	350	361	300	542

Nominal ratings, ACS580-01	
I_N	Rated current available continuously without overloadability at 40 °C.
P_N	Typical motor power in no-overload use.
Maximum output current	
I_{max}	Maximum output current. Available for 2 seconds at start.
Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 10 minutes at 40 °C.
P_{Ld}	Typical motor power in light-duty use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 10 minutes at 40 °C. *) Continuous current allowing 130% I_{Hd} for 1 minute every 10 minutes at 40 °C. **) Continuous current allowing 125% I_{Hd} for 1 minute every 10 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply for the frames R1 to R9 up to +40 °C in enclosure class 21.
The ratings apply for the frames R10 to R11 up to +40 °C in enclosure class IP00/IP20.
For derating at higher altitudes, temperatures, switching frequencies or enclosure classes, see the HW manuals, document codes: 3AXD50000018826 and 3AXD50000015497.

Drive modules, ACS580-04 (3-phase supply voltage range 380-480 V)

Frame type	Frame size	3-phase, U_N = 400 V							3-phase, U_N = 480 V				
		Nominal ratings		Light-duty use		Heavy-duty use		Max. output current	Light-duty use		Heavy-duty use		Max. output current
		P_N (kW)	I_N (A)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	I_{max} (A)	I_{Ld} (A)	P_{Ld} (hp)	I_{Hd} (A)	P_{Hd} (hp)	I_{max} (A)
ACS580-04-505A-4	R10	250	505	485	250	361	200	560	483	400	361	300	560
ACS580-04-585A-4	R10	315	585	575	315	429	250	730	573	450	414	350	730
ACS580-04-650A-4	R10	355	650	634	355	477	250	730	623	500	477	400	730
ACS580-04-725A-4	R11	400	725	715	400	566	315	1020	705	600	566	450	850
ACS580-04-820A-4	R11	450	820	810	450	625	355	1020	807	700	625	500	1020
ACS580-04-880A-4	R11	500	880	865	500	725 *)	400	1100	807	700	625	500	1020

Cabinet-built drives, ACS580-07 (3-phase supply voltage range 380-480 V)

Frame type	Frame size	3-phase, U_N = 400 V							3-phase, U_N = 480 V				
		Nominal ratings		Light-duty use		Heavy-duty use		Max. output current	Light-duty use		Heavy-duty use		Max. output current
		P_N (kW)	I_N (A)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	I_{max} (A)	I_{Ld} (A)	P_{Ld} (hp)	I_{Hd} (A)	P_{Hd} (hp)	I_{max} (A)
ACS580-07-0145A-4	R6	75	145	138	75	105	55	178	124	100	96	75	178
ACS580-07-0169A-4	R7	90	169	161	90	145	75	247	156	125	124	100	247
ACS580-07-0206A-4	R7	110	206	196	110	169	90	287	180	150	156	125	287
ACS580-07-0246A-4	R8	132	246	234	132	206	110	350	240	200	180	150	350
ACS580-07-0293A-4	R8	160	293	278	160	246 **)	132	418	260	200	240	150	418
ACS580-07-0363A-4	R9	200	363	345	200	293	160	498	361	300	302	250	542
ACS580-07-0430A-4	R9	250	430	400	200	363 ***)	200	617	414	350	361	300	542
ACS580-07-0505A-4	R10	250	505	485	250	361	200	560	483	400	361	300	560
ACS580-07-0585A-4	R10	315	585	575	315	429	250	730	573	450	414	350	730
ACS580-07-0650A-4	R10	355	650	634	355	477	250	730	623	500	477	400	730
ACS580-07-0725A-4	R11	400	725	715	400	566	315	1020	705	600	566	450	850
ACS580-07-0820A-4	R11	450	820	810	450	625	355	1020	807	700	625	500	1020
ACS580-07-0880A-4	R11	500	880	865	500	725 *)	400	1100	807	700	625	500	1020

Nominal ratings, ACS580-04 and ACS580-07	
I_N	Rated current available continuously without overloadability at 40 °C.
P_N	Typical motor power in no-overload use.
Maximum output current	
I_{max}	Maximum output current. Available for 2 seconds at start.
Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 10 minutes at 40 °C.
P_{Ld}	Typical motor power in light-duty use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 10 minutes at 40 °C. *) Continuous current allowing 140% I_{Hd} for 1 minute every 10 minutes at 40 °C. **) Continuous current allowing 130% I_{Hd} for 1 minute every 10 minutes at 40 °C. ***) Continuous current allowing 125% I_{Hd} for 1 minute every 10 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply for the frames R6 to R9 up to +40 °C in enclosed IP class 21.
The ratings apply for the frames R10 to R11 up to +40 °C in enclosed IP00/IP20.
For derating at higher altitudes, temperatures or switching frequencies, see the HW manuals, document codes: 3AXD50000018826, 3AXD50000015497, 3AXD50000045815 and 3AXD50000032622.

Ratings, types and voltages

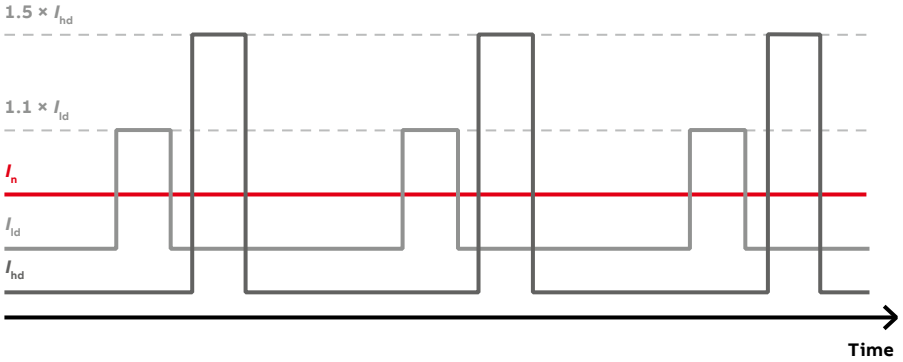
3-phase, U_N = 230 V (range 200 to 240 V). The power ratings are valid at nominal voltage 230 V (0.75 to 75 kW)

Drive type	Frame size	Nominal ratings		Light-overload use		Maximum output current
		I_N (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Max} (A)
ACS580-01-04A7-2	R1	4.7	0.75	4.6	0.75	6.3
ACS580-01-06A7-2	R1	6.7	1.1	6.6	1.1	8.9
ACS580-01-07A6-2	R1	7.6	1.5	7.5	1.5	11.9
ACS580-01-012A-2	R1	12	3	11.8	3	19.1
ACS580-01-018A-2	R1	16.9	4	16.7	4	22
ACS580-01-025A-2	R2	24.5	5.5	24.2	5.5	32.7
ACS580-01-032A-2	R2	31.2	7.5	30.8	7.5	43.6
ACS580-01-047A-2	R3	46.7	11	46.2	11	62.4
ACS580-01-060A-2	R3	60	15	59.4	15	83.2
ACS580-01-089A-2	R5	89	22	88	22	135
ACS580-01-115A-2	R5	115	30	114	30	158
ACS580-01-144A-2	R6	144	37	143	37	205
ACS580-01-171A-2	R7	171	45	169	45	257
ACS580-01-213A-2	R7	213	55	211	55	304
ACS580-01-276A-2	R8	276	75	273	75	380

Nominal ratings	
I_N	Rated current available continuously without overloadability at 40 °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.
Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 10 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.

The ratings apply for the frames R1 to R9 up to +40 °C in enclosed IP21/IP55.
For derating at high altitudes, temperatures or switching frequencies, see the user's HW manual, document code: 3AXD50000035866.

Overloadability and output current illustration



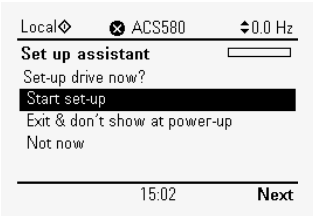
Definition	ACS580
No overload	I_n
110% overload 1 min / 10 minutes	I_{ld}
150% overload 1 min / 10 minutes	I_{hd}

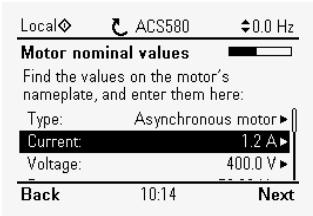
Easiness on a whole new level

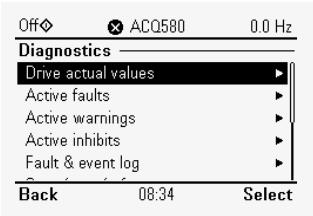
The assistant control panel's intuitive user interface, assistants and ready-made macros offer simplicity for your every day life. The panel guides you through commissioning without a need to know any drive parameters and helps in unclear situations.

Assistant control panel, ACS-AP-S
Set up the drive, fine-tune motor control and monitor values that matter using the assistant control panel, delivered as standard with all ACS580 drives. The assistant control panel can also be used with the ACS480 and the ACS380.

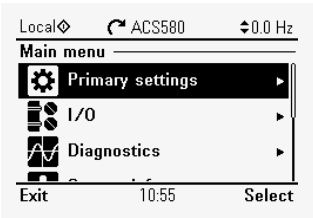
Commission without a hassle
Select language, set time and date, name the drive, enter motor values, test rotating the motor.

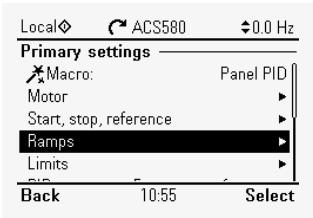


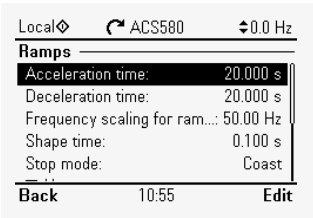




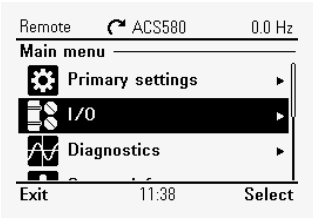
Primary settings
Select ready-made macros, perform ID-run, fine-tune settings related to e.g. ramps, limits, PIDs, fieldbuses, reset to defaults.

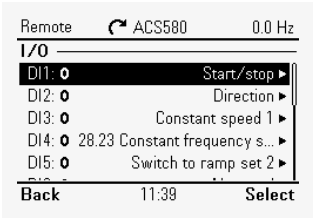


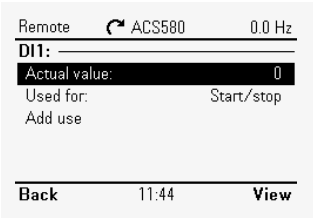




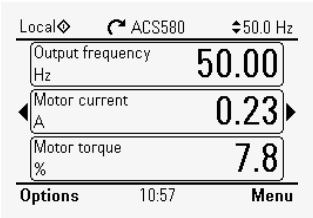
Input/output menu
Set and monitor your input/output (I/O) connections for real-time diagnostics

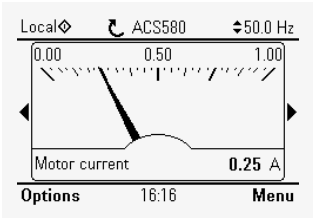


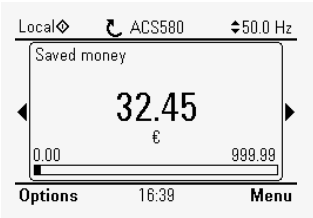




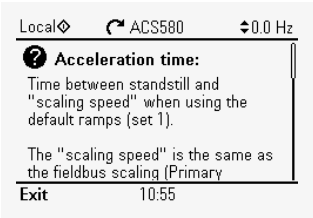
Home view displays
Monitor the values that are the most important to you. You can select values for monitoring from a ready-made list or choose user-defined parameters.

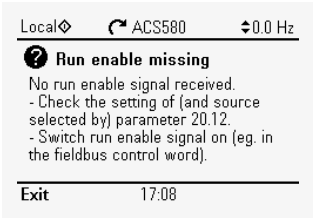


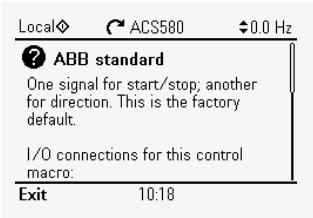




Help button
The help button provides more information about your selection and it can be pressed in any view.







Control panel options and mounting kits

The standard delivery of the ACS580 includes the assistant control panel (requires the +J400 code), but it can be also replaced by other control panels.

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.

Industrial control panel, ACS-AP-I *)
The industrial control panel is compatible with all ABB drives, making it simple to use a single panel with different products.

Basic control panel, ACS-BP-S
The icon-based control panel supports users with parameter backup, settings and fault tracking in basic operation.

Panel bus adapter, CDPI-01
The panel bus adapter is an ideal choice if there is a need to control multiple drives with a single control panel. The panel bus adapter offers also simplicity for cabinet installations as by using it the control panel can be installed on the cabinet door and the drive can be operated easily and safely.

Blank control panel, CDUM-01
The blank control panel can be used for covering the control panel slot if no control panel or panel bus adapter is needed.

Control panel mounting platform, DPMP-01
This mounting platform is for surface mountings. This requires also RDUM-01 (blank control panel with the RJ-45 connector) and a control panel (assistant, basic, Bluetooth or industrial).

Control panel mounting platform, DPMP-02
This mounting platform is for flush mountings. This requires also RDUM-01 (blank control panel with the RJ-45 connector) and a control panel (assistant, basic, Bluetooth or industrial).

Door mounting kit, DPMP-EXT
The door mounting kit is ideal for cabinet installations. A kit for one drive includes one DPMP-02 and one RDUM-01 (blank control panel cover with RJ-45 connector). If a different control panel than the assistant panel is desired for cabinet door installation, it needs to be ordered separately.

Door mounting and daisy chaining

Improve safety and leverage the full potential of the ACS580 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.

Cabinet door

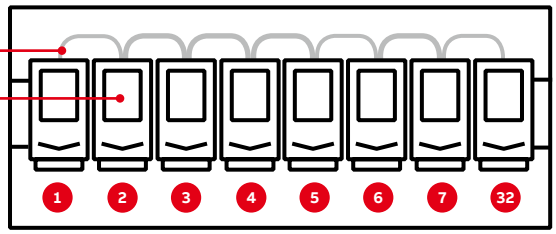
Door mounting kit, DPMP-EXT
The kit includes a surface mounting platform for the drive's control panel, panel bus adapter (CDPI-01) and an RJ-45 cable for connecting the control panel and the panel bus adapter.

Assistant control panel
The assistant control panel is delivered as standard with the ACS580 drives. Also a Bluetooth or industrial control panel can be used.

RJ-45 cable for daisy chaining drives

Panel bus adapter, CDPI-01
The panel bus adapter can be ordered with a plus code +J424 or with an MRP code 3AXD50000009843 as a loose option.

Cabinet, outside



Cabinet, inside

Control panel options
The ACS580 always requires one of the +Jxxx options.
The ACS-AP-S assistant control panel is included as standard in the delivery with the plus code +J400.
It can be replaced by one of the other +Jxxx options listed below.
If no code is implemented in the ACS580 order, the assistant control panel is added to the delivery.

MRP code	Plus code	Description	Type designation
3AUA0000064884	+J400	Assistant control panel **)	ACS-AP-S
3AXD50000025965	+J429	Control panel with Bluetooth interface */**)	ACS-AP-W
3AUA0000088311	+J425	Industrial assistant control panel */**)	ACS-AP-I
3AXD50000028828	+J404	Basic control panel**	ACS-BP-S
3AXD50000009843	+J424	Blank control panel cover (no control panel delivered)	CDUM-01
3AXD50000004419	–	Panel bus adapter	CDPI-01
3AUA0000108878	–	Control panel mounting platform (flush mounted, requires also panel bus adapter on the drive)	DPMP-01
3AXD50000009374	–	Control panel mounting platform (surface mounted, requires also panel bus adapter on the drive)	DPMP-02
3AXD50000016230	–	Control panel mounting platform option, only for ACS580-04 modules	DPMP-03
3AXD50000010763	–	Door mounting kit for the panel (for one drive, contains both DPMP-02 and CDPI-01)	DPMP-EXT

*) Compatible with ACS880 drives
**) Compatible with the ACS480 and ACS380

Higher enclosure class for cabinet-free installations even in harsh conditions

Don’t let dust, moisture or dirt interrupt your processes and drag down productivity. ACS580 IP55/UL Type 12 units keep your systems running even in tough conditions.

- Take advantage of flexible, cabinet-free installation
- Save space, increase safety and reduce overall costs
- Maintain productivity in harsh conditions
- Minimized downtime and flawless operation

Compact units for rough environments
The ACS580 IP55 and UL Type 12 units are an ideal choice for harsh environments, where impurities, such as dust or dirt waft in the air. Typical harsh environments include textile, cement, metal and wood processing industries and harsh outdoor conditions in desert and tropical environments. Higher protection class ensures smooth processes by reducing downtime.

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

Ordering codes	Description
+B056	IP55/UL Type 12 unit (R1-R9)
+F278	Integrated main switch (R1-R5) *)
+E223	Integrated C1 filter (R1-R5) *)
+F316	Integrated main switch and C1 filter (R1-R5 *)

*) Integrated into the R1 and R2, external box for the R3, R4 and R5.

Be productive, save money and keep it simple
If there's a job assignment to build an outdoor swimming pool, the construction employees need to have the right tools and equipment to be successful and productive. A shovel and garden hose are obviously not the right choice for the job. The same applies for your processes: in order to perform the job well, you need to have the right equipment for it.

If the environment around your processes includes impurities, drives with lesser enclosure ratings are more likely to fail because they are not designed for harsh environments. A failure causes an interruption and instantly cuts down productivity and adds costs. Coated control boards of the ACS580 IP55/UL Type 12 units, increased use of plastics with smart design, and fully gasketed control panel section that maintains the IP rating even if the control panel is removed help keep your processes up and running in tough environments.

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

Cost reductions take place also by eliminating the need for a cabinet. IP55/UL Type 12 enclosure provides protection from dust and jetting water from any direction. Speed-controlled main cooling fans maintain optimal drive operating temperatures without a need for external cooling. Keeping the drive at optimal temperature increases the lifetime of the drive.

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

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

Integrated main switch and EMC C1 filter for further safety improvements and cost reductions
The ACS580 IP55/UL Type 12 units can be ordered with an integrated main switch and/or EMC C1 filter (R1-R5). The integrated main switch further simplifies the installation and improves safety as it ensures a correct drive is being disconnected instead of another one. The switch can be padlocked with three padlocks and in case all padlocks are used, three people need to agree and observe together whether it is safe to connect the drive or not before the drive can be connected.

Having the EMC C1 filter embedded to the drive, there is no need to order, install and test it separately. The integrated filter is already tested with the drive and it is pre-wired so there is no need for additional cabling.

Commissioning, programming and customization tools

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

Safe configuration for unpowered drives
The CCA-01 cold configuration adapter provides a serial communication interface for unpowered ACS580 drives. With the adapter, safety isolation of both serial communication and control board power supply is possible. The power supply is taken from a PC USB port.

Cold configurator

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

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

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

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

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

Automation Builder
ABB Automation Builder is the integrated software suite for machine builders and system integrators wanting to automate their machines and systems in a productive way. Combining the tools required for configuring, programming, debugging and maintaining automation projects in a common, intuitive interface, Automation Builder addresses the largest single cost element of most of today's industrial automation projects: software.

Automation Builder

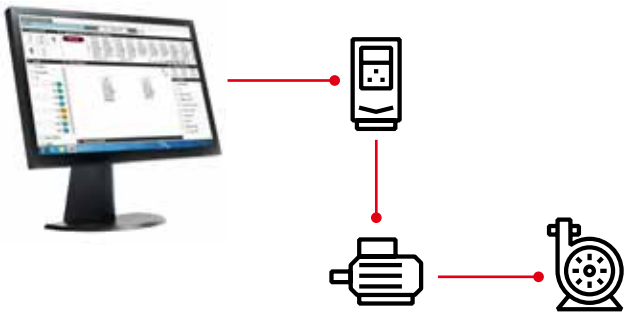
ABB Automation Builder covers the engineering of ABB PLCs, safety PLCs, control panels, drives, motion and robots.

The common engineering tool Automation Builder is used for drive and PLC programming and configuration.

Automation Builder is available in Basic, Standard and Premium editions, fitting the needs of small projects and managing the challenges of many and large projects for OEM and system integrators.

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

Adaptive programming

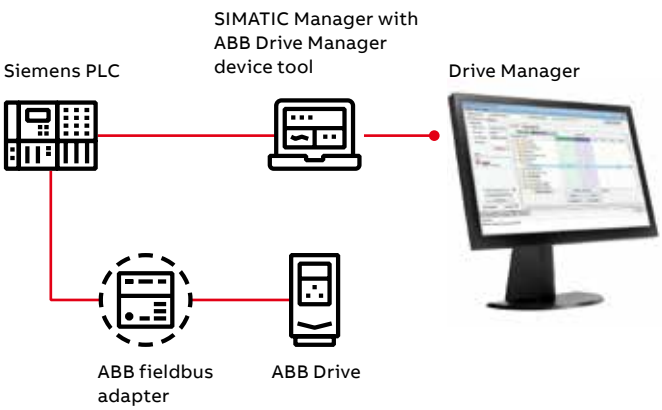


Drive manager
Drive Manager for SIMATIC (DM4S-01) is a plug-in device tool that can be easily installed, for example, in the STEP 7 and TIA Portal. It utilizes the TCI interface of the SIMATIC PLC to communicate with drives connected to PROFIBUS or a PROFINET network.

Drive Manager for SIMATIC offers several useful, ready-made features that simplify the setup of ABB low voltage drives used in combination, for example, with SIMATIC S7 PLCs including:

- Network connection over PROFIBUS and PROFINET (single point of access)
- Online and offline configuration of drives
- Monitoring of actual drive values
- Export to/import from the drive-dedicated PC tools
- Saving drive parameter settings within the SIMATIC PLC project

Drive manager

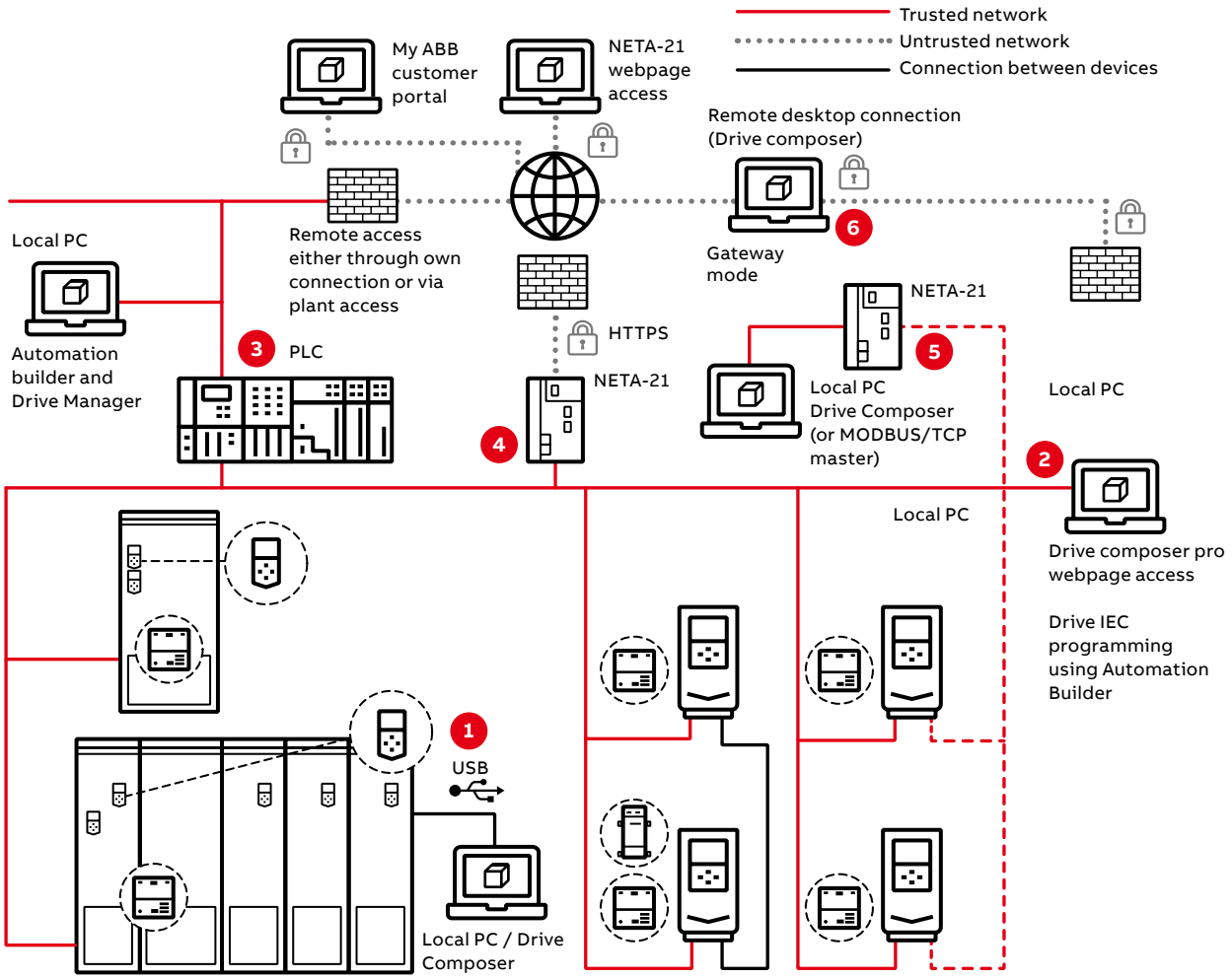


Communication and connectivity
Fast and reliable communication

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

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

Industrial automation plant – different network possibilities and their secure deployment



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

Communication and connectivity
Options

Fieldbus adapter modules
The ACS580 comes with Modbus RTU fieldbus interface as standard and it is also compatible with a wide range of additional fieldbus protocols. Fieldbus communication reduces wiring costs when compared to traditional hardwired input/output connections.
The fieldbus options can be installed into a slot one (1).

Input/output extension modules
Standard input and output can be extended by using optional analog and digital input/output extension modules. The modules are easily installed in the extension slot two (2) located on the drive.

Fieldbus options

Plus code	MRP code	Fieldbus protocol	Adapter
+K451	68469341	DeviceNet™	FDNA-01
+K454	68469325	PROFIBUS DP. DPV0/DPV1	FPBA-01
+K457	68469376	CANopen®	FCAN-01
+K458	3AUA0000031336	Modbus RTU	FSCA-01
+K462	3AUA0000094512	ControlNet	FCNA-01
+K469	3AUA0000072069	EtherCAT®	FECA-01
+K470	3AUA0000072120	POWERLINK	FEPL-02
+K475	3AUA0000089109	Two port EtherNet/IP™, Modbus TCP, PROFINET IO	FENA-21
+K490	3AXD50000192786	Two port Ethernet/IP	FEIP-21 *)
+K491	3AXD50000049964	Two port Modbus/TCP	FMBT-21
+K492	3AXD50000192779	Two port PROFINET IO	FPNO-21 *)

*) Available during 2019

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CMOD-01

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CMOD-02

—
CHDI-01

—
CPTC-02

—
CBAI-01

I/O options

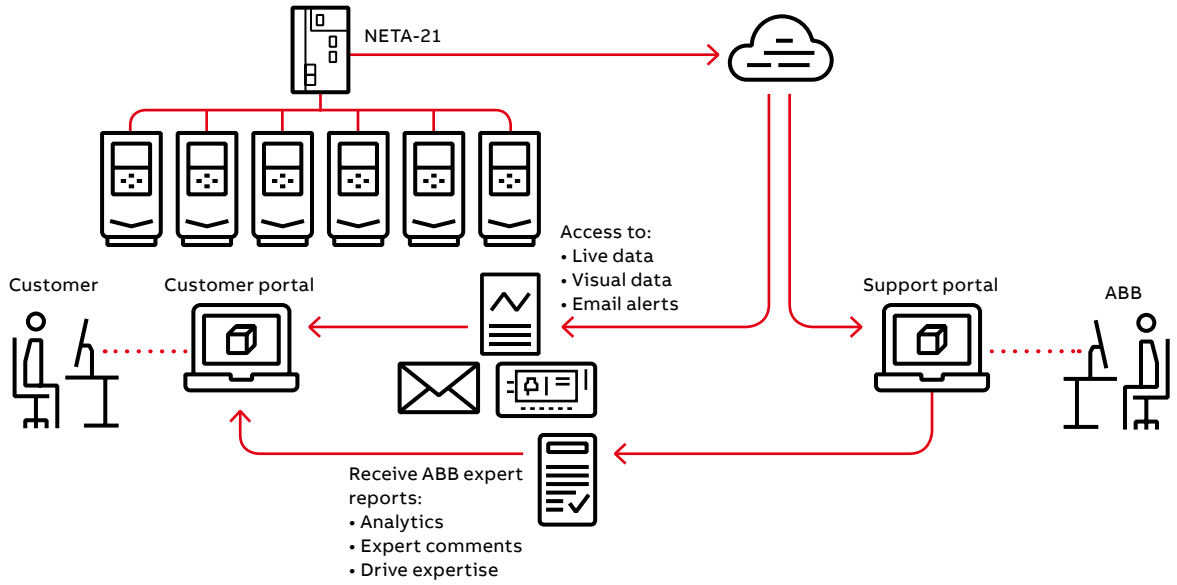
Plus code	MRP code	Description	Type designation
+L501	3AXD50000004420	External 24 V AC and DC 2 x RO and 1 x DO	CMOD-01
+L523	3AXD50000004418	External 24 V and isolated PTC interface	CMOD-02
+L512	3AXD50000004431	115/230 V digital input 6 x DI and 2 x RO	CHDI-01
+L537	*)	ATEX certified PTC interface and external 24 V	CPTC-02
+L500	3AXD50000137954	Bipolar analog I/O adapter module **)	CBAI-01

*) Available during 2019
**) No additional analog input/output is offered

Remote condition monitoring

What is remote condition monitoring?
Remote Condition Monitoring is a service that delivers you accurate, real-time information about drive events to ensure your equipment is available, reliable and maintainable.
The remote monitoring tool is an internet-based application that gives you real-life data from your drive.

- Possibility to monitor the bearing temperature of the motor connected to the drive
- Access to the Key Perfomance Indicator (KPI)
- Access to real-time data
- Access to condition history
- Immediate notifications
- Easy access to drive parameters and I/O data
- Access to drive log data, load levels, run time, energy consumption



Remote condition monitoring module
Condition Monitoring is supported by the NETA-21 remote monitoring tool. NETA-21 gives easy access to the drive via the internet or local Ethernet network. It comes with a built-in web server and requires no Flash/Java plugins.

Users can access the NETA-21 web page using a 3G modem from anywhere with a standard PC, tablet or a mobile phone.

NETA-21	Ordering code	Description
	3AUA0000094517	2 x panel bus interface
		max. 9 drives
		2 x Ethernet interface
		SD memory card

—

Service delivery process

On-site mapping of the installed base
You and local ABB experts go through the installed base on-site and decide what drives will be included in the Condition Monitoring service.

Remote connection installation and activation
An ABB service engineer installs and activates the remote connection. You will be informed about the installation and activation date – so easy!

Start monitoring
Remote monitoring is ready for use. Data collection starts at the portal.

Using the myABB Customer Portal
You get access to the portal where all the service data is collected.

Accessing live data
Now you can monitor drive performance data, including availability, condition, operating parameters and fault events.

Accessing visual data
Create customized performance reports with visually clear performance charts and graphs.

Optional service activities

Making best decisions
Accurate and up-to-date information on drive events facilitates making the right decisions about drive operation.

Receiving email alerts
You will get immediate email notification of any drive fault or warning, or limited availability status.

Delivering ABB expert reports
You get an expert annual analysis report on the drive's condition based on monitoring data. This report also includes an ABB specialist's maintenance recommendations.

EMC – electromagnetic compatibility

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

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

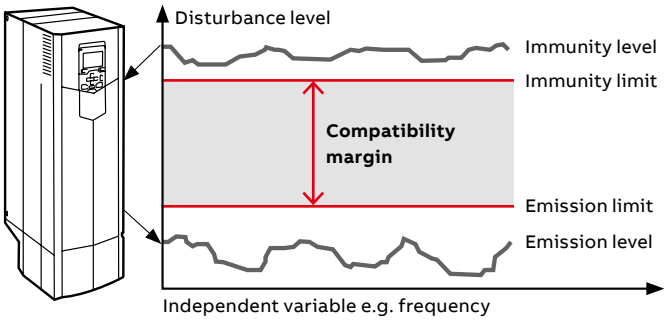
Installation environments
A power drive system (PDS) can be connected to either industrial or public power distribution networks. The environment class depends on the way the PDS is connected to power supply.

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

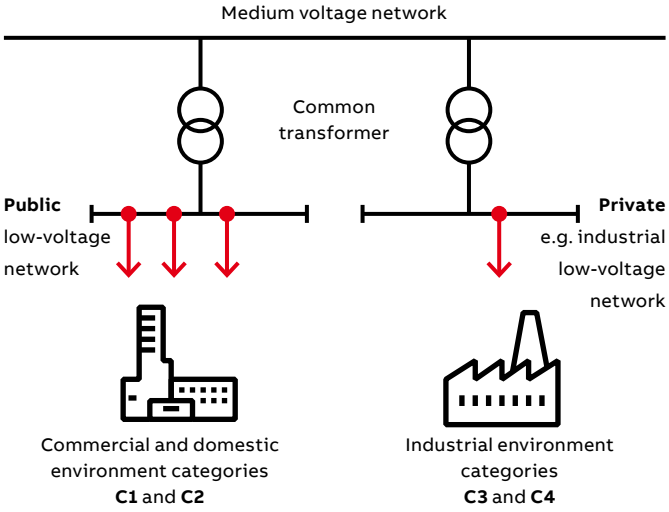
The **2nd environment** includes all establishments directly connected to public low voltage power supply networks.

EMC solutions
To fulfill the EMC requirements, the drives are equipped with standard or optional RFI filtering for HF disturbances.
- Using ferrite rings in power connection points
- Using an AC or DC choke (while they are meant to protect against harmonics, they reduce HF disturbances as well)
- Using an LCL filter in the case of regenerative drives
- Using a du/dt filter

Immunity and emission compatibility



Installation environments



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

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

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

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

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

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Every ACS580 drive is equipped with a built-in filter to reduce high-frequency emissions.

EMC product standard (EN 61800-3) category C2 is fulfilled in wall-mounted drives and in cabinet-built drives up to frame size R9. Category C3 is fulfilled in drive modules and cabinet-built drives (frames R10 and R11) with no external filters.

Comparison of EMC standards

EN 61800-3, product standard	EN 61800-3, product standard	EN 55011, product family standard for industrial, scientific and medical (ISM) equipment	EN 6100-6-4, generic emission standard for industrial environments	EN 61000-6-3, generic emission standard for residential, commercial and light-industrial environment
Category C1	1st environment, unrestricted distribution	Group 1. Class B	Not applicable	Applicable
Category C2	1st environment, restricted distribution	Group 1. Class A	Applicable	Not applicable
Category C3	2nd environment, unrestricted distribution	Group 2. Class A	Not applicable	Not applicable
Category C4	2nd environment, restricted distribution	Not applicable	Not applicable	Not applicable

EMC compliance and maximum cable length of ACS580-01/07 units *)

Type	Voltage	Frame sizes	1st environment, restricted distribution, C1, grounded network (TN)	1st environment, restricted distribution, C2, grounded network (TN)	2nd environment, unrestricted distribution, C3, grounded network (TN)	2nd environment, unrestricted distribution, C3, ungrounded network (IT)
ACS580-01	380-480 V	R1-R5	With the plus codes: +F316, +E223	Standard device, cable length 100 m	Standard device, cable length 100 m	–
ACS580-01/07	380-480 V	R6-R9	–	Standard device, cable length 150 m	Standard device, cable length 150 m	–
ACS580-04/07	380-480 V	R10-R11	–	–	Standard device, cable length 100 m	–

*) Motor cable operational functionality up to 300 m. See ACS580 hardware manuals 3AXD50000018826, 3AXD50000015497, 3AXD50000045815 and 3AXD50000032622 for frame specific information.

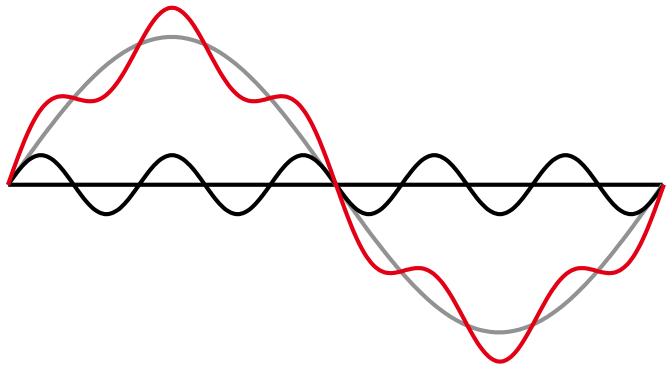
Harmonic mitigation

What are harmonics?
Harmonic currents are created by non-linear loads connected to the power distribution system. Harmonic distortion is a form of pollution in the electric plant that can cause problems if the voltage distribution caused by harmonic currents increases above certain limits.

All power electronic converters used in different types of electronic systems can increase harmonic disturbances by injecting harmonic currents directly into the grid.

Electricity supply is hardly ever a pure sine wave voltage, and current that deviates from the sine form contains harmonics. The distortion is caused by non-linear loads connected to the electrical supply. Harmonics cause disturbances and equipment failures.

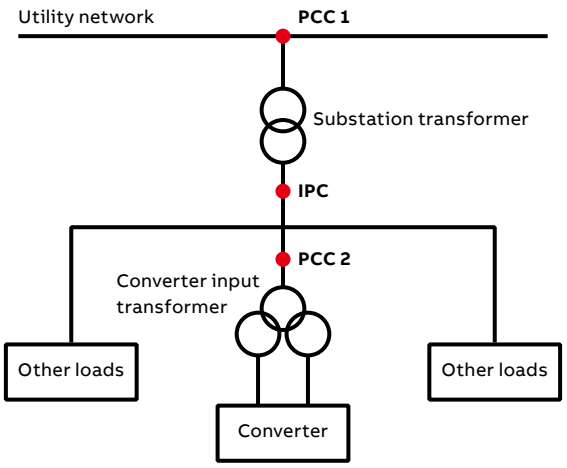
The total current as the sum of the fundamental and 5th harmonics



Where do the harmonics come from?

Non-linear loads such as:

- Variable speed drives
- Uninterrupted power supplies (UPS)
- Industrial rectifiers
- Welding machines
- Fluorescent lighting systems (electronic ballast)
- Computers
- Printers
- Servers
- Electronic appliances
- ...



- Point of common coupling (**PCC**) is the point where the harmonic distortion is specified, e.g.
  - between the plant and the utility network (**PCC1**)
  - between the non-linear load and other loads within an industrial plant (**PCC 2**)

- In-plant point of coupling (**IPC**) is the point inside the customer system or installation to be studied

The effects of harmonic distortions

Harmonic currents	Harmonic voltage
Mainly affect the power distribution system up to the rectifier: • Additional losses in wires and cables • Extra heating of transformers • Circuit breaker malfunctioning	Can affect other equipment connected to the electrical system: • Erratic operation of telecommunication systems, computers, video monitors, electronic test equipment, etc. • Resonance with power factor correction capacitors

ACS580 drives are compliant with EN 61000-3-12. They are equipped with:
- optimized DC choke (R1-R9)
- AC chokes (R10-R11)

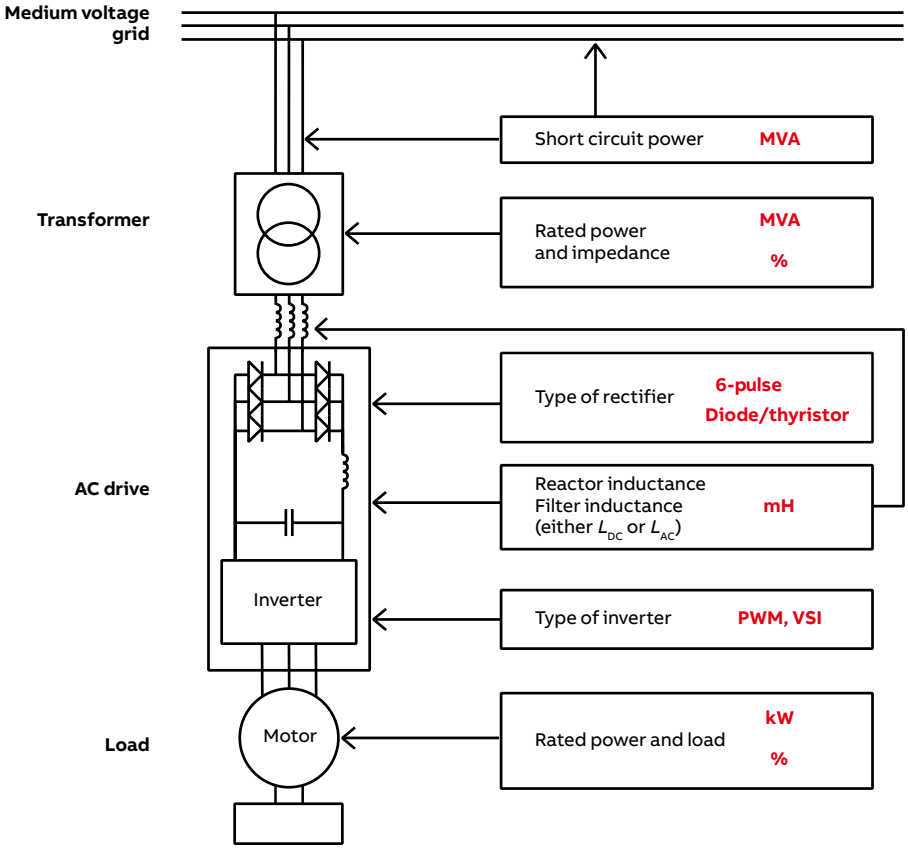
By choosing the ACS580, you can automatically make your plant more reliable. Built-in chokes mitigate harmonics reducing disturbances and equipment failures. Smaller harmonic content also saves money and makes the installation easier because it allows smaller fuses and longer motor cables to be used. Finally, less harmonics means also longer lifetime for the components and thus less maintenance needs and downtime.

Reliable operation

Reduced cost

Longer lifetime

Drive system features affecting harmonics

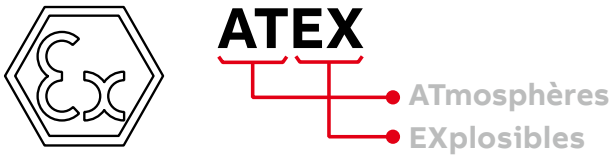


Harmonics reduction can be achieved either by structural modifications in the drive system or by using external filtering. The structural modifications may be to strengthen the supply, or to use 12 or more pulse drives, to use a controlled rectifier, or to improve the internal filtering in the drive.

The image to the left shows the factors in the AC drive system that have some influence on harmonics. The current harmonics depend on the drive construction, and the voltage harmonics are the current harmonics multiplied by the supply impedances.

For explosive atmospheres
ATEX certified

What is a potentially explosive atmosphere and where can it be?
Explosive atmospheres occur when flammable gases, mist, vapors or dust are mixed with air, which creates a risk of explosion. A potentially explosive area is defined as a location where there is a risk of flammable mixes. These atmospheres can be found throughout industries, from **chemical, pharmaceutical** and **food**, to **power** and **wood processing**. The electrical equipment that is installed in such locations must be designed and tested to endure these conditions and guarantee a safe function.

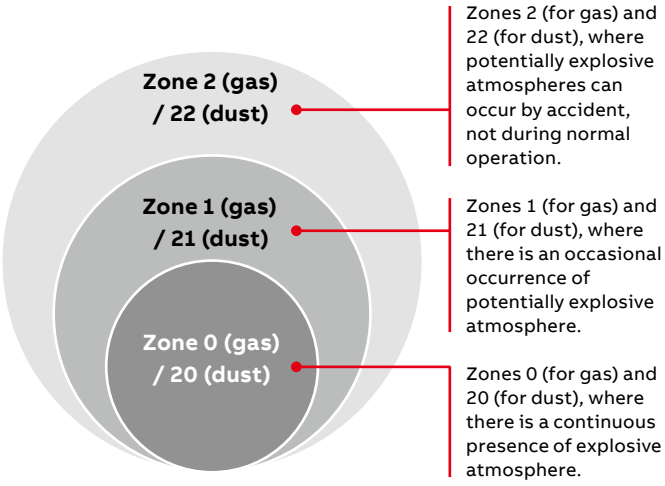


What does ATEX mean?
The term ATEX comes from the French words “ATmosphères EXplosibles”, and it is a combination of two EU directives: the Worker Protection Directive 1999/92/EC and the Product Directive 2014/34/ EU. **The ATEX Directives are designed to protect employees, the public and the environment from accidents owing to explosive atmospheres**.

ATEX provides similar guidelines to the IECEx System, with a few exceptions, and with certification of protective devices (e.g. drive-integrated safety functions).

How to ensure a safe operation?
With ABB’s ATEX-certified offering and services, safe operation can be ensured.
Motors are directly connected to the machines in the potentially explosive atmosphere, and certain issues need to be considered when selecting a motor together with a drive. These atmospheres have a defined zone classification, and the zone defines the minimum requirements (category) the motors must comply with. The category defines the permitted motor protection types.

Potentially explosive atmosphere zones
Within industries, all potentially explosive atmospheres are required to have an area classification called Zones. Globally, a Zone system is used to classify potentially explosive areas. The Worker Protection Directive 1999/92/EC and the EU standards IEC 60079-10-x, EN 60079-10-x define these zones. In all cases, the owner of the site where the potentially explosive atmosphere exists has the responsibility to define the zones according to the requirements.



Tested packages

Motor and drive combinations are **tested and certified in ABB's test center**. By using an ABB motor together with an ABB drive as a package, you can enjoy the benefits of efficient, high-performance motors with optimal speed and control accuracy – without compromising safety.

With the ABB ATEX certified motor and drive package the ATEX certified temperature protection modules are not obligatory, the tested combinations fulfill the IEC/ATEX standards and ensure a safe performance.

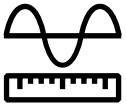
- No additional testing and certification are needed
- No ATEX thermistor protection modules are needed
- Safe and cost effective solution for industries in potentially explosive atmospheres

Safe temperature monitoring

For non-tested and certified motors and drives (e.g. for use with other manufacturer's motors), ATEX certified temperature protection is an integrated option.

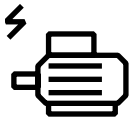
The ACS580's ATEX thermistor protection modules, CPTC-02, can be integrated into the drive if the motor is operating in a potentially explosive environment. **The purpose of the safety function is to disconnect the motor from the power supply before the motor overheats and causes a risk of explosion in an ATEX environment.**

Correct dimensioning



Correct dimensioning is important. **Correctly sized motors and drives reduce motor frame heating and sparks from bearing currents**. They also help to reduce energy use.

Insulation and drive filters



ABB's offering for correct insulation and filters **protects the motor** from voltage phenomena, bearing currents and motor overheating. The insulation and filters must be selected according to voltage and frame size.

Easy drive upgrades

With the drive upgrades below, the ATEX certification stays valid from the old to the new generation models. This means that there is no need for new ATEX certification during the upgrade → you save time and money.

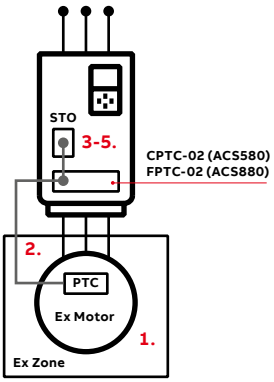
ATEX certification approved – old generation model	Comparable converter upgrade	ATEX certification stays valid – new generation model
ACS550	→	ACS580

Global service and support network

ABB's global network of certified service providers are trained and experienced to help you with motors and drives for applications in explosive atmospheres.

The support network ensures that your ABB Declaration of Conformity is retained.

ABB's ATEX thermistor protection modules CPTC-02



With option +L537 +Q971:

1. Motor temperature rises above the PTC sensor limit temperature.
2. The sensor resistance increases very sharply and indicates overheating to the ATEX-certified module.
3. The module switches the STO (safe torque off) circuit off, which activates the STO function.
4. The STO function disables the control voltage in the power semiconductors of the drive output stage.
5. The drive is prevented from generating the required torque to rotate the motor.

▸ **The safe state is guaranteed**

Cooling and fuses

Cooling
ACS580 drives are fitted with variable-speed cooling air fans. The cooling air must be free from corrosive materials and not exceed the maximum ambient temperature of 40 °C for frames R1 to R9 (50 °C with derating). The speed-controlled fans cool the drive only when needed, which reduces overall noise level and energy consumption.

Fuse connections
Standard fuses can be used with ABB general purpose drives. For input fuses, see the table below.

Wall-mounted drives, ACS580-01

Cooling air flow and recommended input protection fuses for 380 to 480 V units

Type designation	Frame size	Cooling air flow 380 to 480 V units					Recommended input protection fuses for 380 to 480 V units ***)			
		Heat dissipation *)		Air flow		Max. noise level **)	IEC fuses		UL fuses	
		(W)	(BTU/Hr)	(m^3/h)	(ft^3/min)	(dBA)	(A)	Fuse type	(A)	Fuse type
ACS580-01-02A7-4	R1	45	155	43	25	55	4	gG	15	UL Class T
ACS580-01-03A4-4	R1	55	187	43	25	55	6	gG	15	UL Class T
ACS580-01-04A1-4	R1	66	224	43	25	55	6	gG	15	UL Class T
ACS580-01-05A7-4	R1	84	288	43	25	55	10	gG	15	UL Class T
ACS580-01-07A3-4	R1	106	362	43	25	55	10	gG	15	UL Class T
ACS580-01-09A5-4	R1	133	454	43	25	55	16	gG	15	UL Class T
ACS580-01-12A7-4	R1	174	593	43	25	55	16	gG	15	UL Class T
ACS580-01-018A-4	R2	228	777	101	59	66	25	gG	30	UL Class T
ACS580-01-026A-4	R2	322	1100	101	59	66	32	gG	30	UL Class T
ACS580-01-033A-4	R3	430	1469	179	105	70	40	gG	40	UL Class T
ACS580-01-039A-4	R3	525	1791	179	105	70	50	gG	60	UL Class T
ACS580-01-046A-4	R3	619	2114	179	105	70	63	gG	60	UL Class T
ACS580-01-062A-4	R4	835	2852	134	79	69	80	gG	80	UL Class T
ACS580-01-073A-4	R4	1024	3497	134	79	69	100	gG	90	UL Class T
ACS580-01-088A-4	R5	1240	4235	139	82	63	100	gG	110	UL Class T
ACS580-01-106A-4	R5	1510	5157	139	82	63	125	gG	150	UL Class T
ACS580-01-145A-4	R6	1476	5041	435	256	67	160	gG	200	UL Class T
ACS580-01-169A-4	R7	1976	6748	450	265	67	250	gG	225	UL Class T
ACS580-01-206A-4	R7	2346	8012	450	265	67	315	gG	300	UL Class T
ACS580-01-246A-4	R8	3336	11393	550	324	65	355	gG	350	UL Class T
ACS580-01-293A-4	R8	3936	13442	550	324	65	425	gG	400	UL Class T
ACS580-01-363A-4	R9	4836	16516	1150	677	68	500	gG	500	UL Class T
ACS580-01-430A-4	R9	6036	20614	1150	677	68	630	gG	600	UL Class T

*) Heat dissipation value is a reference for cabinet thermal design.
**) The maximum noise level at full fan speed. When the drive is not operating at full load and at maximum ambient temperature the noise level is lower.
***) For detailed fuse sizes and types, please see the ACS580 HW manuals, document codes: 3AXD50000018826 and 3AXD50000015497.
Note: For flange mounting, please refer to the ACS580 HW manuals, document codes: 3AXD50000018826 and 3AXD50000015497.

Drive modules, ACS580-04

Cooling air flow and recommended input protection fuses for 380 to 480 V units

Type designation	Frame size	Cooling air flow 380 to 480 V units					Recommended input protection fuses for 380 to 480 V units ***)			
		Heat dissipation *)		Air flow		Max. noise level **)	IEC fuses		UL fuses	
		(W)	(BTU/Hr)	(m^3/h)	(ft^3/min)	(dBA)	(A)	Fuse type	(A)	Fuse type
ACS580-04-505A-4	R10	5602	19132	1200	707	72	***)	***)	***)	***)
ACS580-04-585A-4	R10	6409	21888	1200	707	72	***)	***)	***)	***)
ACS580-04-650A-4	R10	8122	27738	1200	707	72	***)	***)	***)	***)
ACS580-04-725A-4	R11	8764	29931	1200	707	72	***)	***)	***)	***)
ACS580-04-820A-4	R11	9862	33680	1200	707	72	***)	***)	***)	***)
ACS580-04-880A-4	R11	10578	36126	1420	848	72	***)	***)	***)	***)

*) Heat dissipation value is a reference for cabinet thermal design.
**) The maximum noise level at full fan speed. When the drive is not operating at full load and at maximum ambient temperature the noise level is lower.
***) For detailed fuse sizes and types, please see the ACS580 HW manuals, document codes: 3AXD50000018826 and 3AXD50000015497.

Cabinet-built drives, ACS580-07

Cooling air flow and recommended input protection fuses for 380 to 480 V units

Type designation	Frame size	Cooling air flow 380 to 480 V units					Recommended input protection fuses for 380 to 480 V units ***)			
		Heat dissipation *)		Air flow		Max. noise level **)	IEC fuses		UL fuses	
		(W)	(BTU/Hr)	(m^3/h)	(ft^3/min)	(dBA)	(A)	Fuse type	(A)	Fuse type
ACS580-07-0145A-4	R6	2487	8485	685	403	67	250	170M3816D	250	DFJ-250
ACS580-07-0169A-4	R7	2497	8519	700	412	67	250	170M3816D	300	DFJ-300
ACS580-07-0206A-4	R7	3314	11307	700	412	67	315	170M3817D	300	DFJ-300
ACS580-07-0246A-4	R8	3806	12987	800	471	65	400	170M5408	400	170M5408
ACS580-07-0293A-4	R8	4942	16863	800	471	65	500	170M5410	500	170M5410
ACS580-07-0363A-4	R9	5868	20024	1400	824	68	630	170M6410	630	170M6410
ACS580-07-0430A-4	R9	7600	25932	1400	824	68	700	170M6411	700	170M6411
ACS580-07-0505A-4	R10	8353	28502	1900	1118	72	800	170M6412	***)	***)
ACS580-07-0585A-4	R10	9471	32317	1900	1118	72	900	170M6413	***)	***)
ACS580-07-0650A-4	R10	11200	38215	1900	1118	72	1000	170M6414	***)	***)
ACS580-07-0725A-4	R11	11386	38851	2400	1413	72	1250	170M6416	***)	***)
ACS580-07-0820A-4	R11	13725	46831	2400	1413	72	1250	170M6416	***)	***)
ACS580-07-0880A-4	R11	15300	52207	2620	1542	72	1400	170M6417	***)	***)

*) Heat dissipation value is a reference for cabinet thermal design.
**) The maximum noise level at full fan speed. When the drive is not operating at full load and at maximum ambient temperature the noise level is lower.
***) For detailed fuse sizes and types, please see the ACS580 HW manuals, document codes: 3AXD50000018826, 3AXD50000015497, 3AXD50000045815 and 3AXD50000032622.

du/dt filters

du/dt filtering suppresses inverter output voltage spikes and rapid voltage changes that stress motor insulation. Additionally, du/dt filtering reduces capacitive leakage currents and high-frequency emissions from the motor cable as well as high-frequency losses and bearing currents in the motor. The need for du/dt filtering depends on the motor insulation. For information on the construction of the motor insulation, consult the manufacturer. More information on the du/dt filters can be found in the ACS580 hardware manual.

External du/dt filter for ACS580-01 and ACS580-04

	du/dt filter type * 3 filters included, dimensions apply to one filter.															
	Unprotected (IP00)								Protected to IP22				Protected to IP54				
ACS580 400 V	NOCH0016-60	NOCH0030-60	NOCH0070-60	NOCH0120-60*	FOCH0260-70	FOCH0320-50	FOCH0610-70	FOCH0875-70	NOCH0016-62	NOCH0030-62	NOCH0070-62	NOCH0120-62	NOCH0016-65	NOCH0030-65	NOCH0070-65	NOCH0120-65	BOCH-0880A-7
ACS580-01-02A7-4	●								●				●				
ACS580-01-03A4-4	●								●				●				
ACS580-01-04A1-4	●								●				●				
ACS580-01-05A7-4	●								●				●				
ACS580-01-07A3-4	●								●				●				
ACS580-01-09A5-4	●								●				●				
ACS580-01-12A7-4	●								●				●				
ACS580-01-018A-4		●								●				●			
ACS580-01-026A-4		●								●				●			
ACS580-01-033A-4			●								●				●		
ACS580-01-039A-4			●								●				●		
ACS580-01-046A-4			●								●				●		
ACS580-01-062A-4			●								●				●		
ACS580-01-073A-4				●								●				●	
ACS580-01-088A-4				●								●				●	
ACS580-01-106A-4				●								●				●	
ACS580-01-145A-4					●												
ACS580-01-169A-4					●												
ACS580-01-206A-4					●												
ACS580-01-246A-4					●												
ACS580-01-293A-4					●												
ACS580-01-363A-4						●											
ACS580-01-430A-4						●											
ACS580-04-505A-4							●										
ACS580-04-585A-4							●										
ACS580-04-650A-4							●										
ACS580-04-725A-4								●									
ACS580-04-820A-4								●									
ACS580-04-880A-4								●									

External du/dt filters for ACS580-07

	du/dt filter type * 3 filters included, dimensions apply to one filter.		
		Protected to IP54	
ACS580 400 V	BOCH-0880A-7	COF-01	COF-02
ACS580-07-0145A-4		●	
ACS580-07-0169A-4		●	
ACS580-07-0206A-4		●	
ACS580-07-0246A-4			●
ACS580-07-0293A-4			●
ACS580-07-0363A-4			●
ACS580-07-0430A-4			●
ACS580-07-0505A-4	●		
ACS580-07-0585A-4	●		
ACS580-07-0650A-4	●		
ACS580-07-0725A-4	●		
ACS580-07-0820A-4	●		
ACS580-07-0880A-4	●		

Dimensions and weights of the du/dt filters

du/dt filter	Height (mm)	Width (mm)	Depth (mm)	Weight (kg)
NOCH0016-60	195	140	115	2.4
NOCH0016-62/65	323	199	154	6
NOCH0030-60	215	165	130	4.7
NOCH0030-62/65	348	249	172	9
NOCH0070-60	261	180	150	9.5
NOCH0070-62/65	433	279	202	15.5
NOCH0120-60 [3)]	200	154	106	7
NOCH0120-62/65	765	308	256	45
FOCH0260-70	382	340	254	47
FOCH0320-50	662	319	293	65
FOCH0610-70	662	319	293	65
FOCH0875-70	662	319	293	65
BOCH-0880A-7	400	248	456	18
COF-01	570	296	360	23
COF-02	570	360	301	23

Sine filters

Sine filters are low-pass filters that suppress the high frequency components of the drive output.

A sine filter consists of single- or three-phase reactors and delta- or star-connected capacitors. The sine filter provides true sinusoidal voltage waveform at the drive output by suppressing the high frequency voltage components of the drive output. Suppression of the high frequency voltage components is needed when extra-long motor cables are used, there is a step-up transformer between the drive and a motor, or when a drive is installed with an old direct-on-line motor.

ACS580-01, sine filters			
Type designation	**IP00**	**IP21**	**$I_{cont.}$ max**
	Sine filter type	**Sine filter type**	**(A)**
3-phase, U_N = 380...480 V. The power ratings are valid at nominal voltage 400 V (0.75 to 250 kW).			
ACS580-01-02A7-4	B84143V0004R229	B84143Q0002R229	2.3
ACS580-01-03A4-4	B84143V0004R229	B84143Q0002R229	3.1
ACS580-01-04A1-4	B84143V0004R229	B84143Q0002R229	3.8
ACS580-01-05A7-4	B84143V0006R229	B84143Q0002R229	5.3
ACS580-01-07A3-4	B84143V0011R229	B84143Q0004R229	6.9
ACS580-01-09A5-4	B84143V0011R229	B84143Q0004R229	9.2
ACS580-01-12A7-4	B84143V0016R229	B84143Q0006R229	12.1
ACS580-01-018A-4	B84143V0016R229	B84143Q0006R229	16
ACS580-01-026A-4	B84143V0025R229	B84143Q0008R229	24
ACS580-01-033A-4	B84143V0033R229	B84143Q0008R229	31
ACS580-01-039A-4	B84143V0050R229	B84143Q0010R229	37
ACS580-01-046A-4	B84143V0050R229	B84143Q0010R229	43
ACS580-01-062A-4	B84143V0066R229	B84143Q0010R229	58
ACS580-01-073A-4	B84143V0066R229	B84143Q0010R229	64
ACS580-01-088A-4	B84143V0095R229	B84143Q0012R229	77
ACS580-01-106A-4	B84143V0095R229	B84143Q0012R229	91
ACS580-01-145A-4	B84143V0162S229	B84143Q0014R229	126
ACS580-01-169A-4	B84143V0162S229	B84143Q0014R229	153
ACS580-01-206A-4	B84143V0230S229	B84143Q0016R229	187
ACS580-01-246A-4	B84143V0230S229	B84143Q0016R229	209
ACS580-01-293A-4	B84143V0390S229	B84143Q0018R229	249
ACS580-01-363A-4	B84143V0390S229	B84143Q0018R229	297
ACS580-01-430A-4	B84143V0390S229	B84143Q0018R229	352

ACS580 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 easy usability, providing all the relevant information from production plants and machines at a single touch.

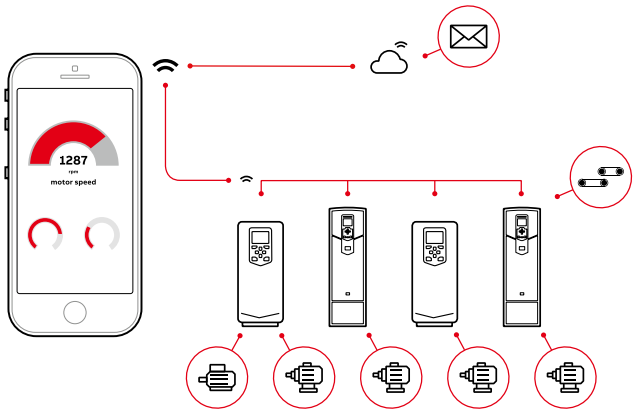
All-compatible drives portfolio
The all-compatible drives share the same architecture; software platform, tools, user interfaces and options. Yet, there is an optimal drive from the smallest water pump to the biggest cement kiln, and everything in the between.

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.

Jokab safety products
ABB Jokab Safety offers an extensive range of innovative products and solutions for machine safety systems. It is represented in standardization organizations for machine safety and works daily with the practical application of safety requirements in combination with production requirements.

ABB Ability™ smartphone apps

Better connectivity and user experience with Drivetune



Easy and fast access to product information and support

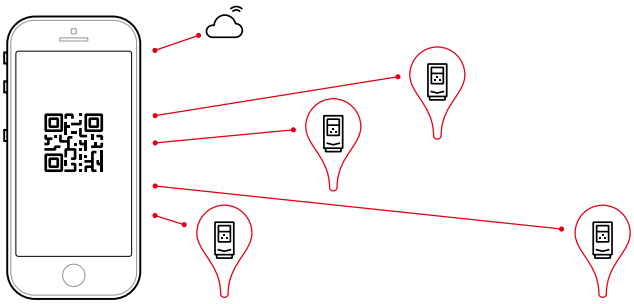
Startup, commission and tune your drive and application

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 for commissioning and managing drives

Drivebase for ensured reliability and reduced downtime on production sites


Place a barcode inside the viewfinder rectangle to scan it.
Cancel
ABB
Stop
Loc/Rem
Start

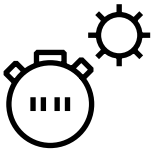
Services to match your needs

Your service needs depend on your operations, the life cycle of your equipment, and your business priorities. We have identified our customers' four most common needs, and we created service options to satisfy them. Which will you choose to keep your drives at peak performance?

Is uptime your priority?

Keep your drives running with precisely planned and executed maintenance.

Example services include:
- ABB Ability™ Life Cycle Assessment
- Installation and Commissioning
- Spare Parts
- Preventive Maintenance
- Reconditioning
- ABB Drive Care agreement
- Drive Exchange



Operational efficiency

Is rapid response a key consideration?

If your drives need immediate action, our global network is at your service.

Example services include:
- Technical Support
- On-site Repair
- ABB Ability™ Remote Assistance
- Response time agreements
- Training

Rapid response

Drives service
Your choice, your future

The longevity of your drives is influenced by the service you choose.
Whatever you choose, it should be a well-informed decision. We have the expertise and experience to help you find and implement the right service for your drive equipment. Start by asking yourself these two critical questions:
- Why would my drive be serviced?
- What would my optimal service options be?

From here, count on our guidance and full support throughout the entire lifetime of your drives.

Your choice, your business efficiency
ABB Drive Care lets you focus on your core business. A selection of predefined service options matching your needs provides optimal, more reliable performance, extends your drive's lifetime, and controls costs. This reduces the risk of unplanned downtime and makes it easier to budget for maintenance.

We can help you more if we know where you are!
Register your drive for advanced services.

Need to extend your assets' lifetime?

Maximize the lifetime of your drive with our services.

Example services include:
- ABB Ability™ Life Cycle Assessment
- Upgrades, Retrofits and Modernization
- Replacement, Disposal and Recycling

Life cycle management

Is performance most critical to your operation?

Get optimal performance out of your machinery and systems.

Example services include:
- ABB Ability™ Remote Services
- Engineering and Consulting
- Inspection and Diagnostics
- Upgrades, Retrofits and Modernization
- Workshop Repair
- Tailored services

Performance improvement

A lifetime of peak performance

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

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

ABB drives life cycle phases explained:

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

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

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

Step 1

Life Cycle Status Announcement
Provides early information about the upcoming life cycle phase change and how it affects the availability of services.

Step 2

Life Cycle Status Statement
Provides information about the drive's current life cycle status, availability of product and services, life cycle plan and recommended actions.

Ordering information

How to built up your ordering code

ACS580-01

The type designation tells you the specifications and configuration of the drive.
The table shows the primary drive variants.
Sample type code: ACS580-01-12A7-4+XXXX

Segment	A	D	E	F
ACS580	01	12A7	4	Option codes

Product series
Types and construction
Rating
Voltage
Option code

Basic codes

Segment	Option	Description
A	Construction	01 = When no options are selected: Wall mounted, IP21 (UL Type 1), assistant control panel with a USB port, choke, EMC C2 filter (internal EMC filter), safe torque off, braking chopper in frames R1, R2, R3, coated boards, cable lead through entry from the bottom, cable box or the conduit plate with cable entries, quick installation and start-up guide multilingual)
D	Current rating	Refer to the rating table
E	Voltage rating	4 = 400/480 V (380...480 V)

Option codes

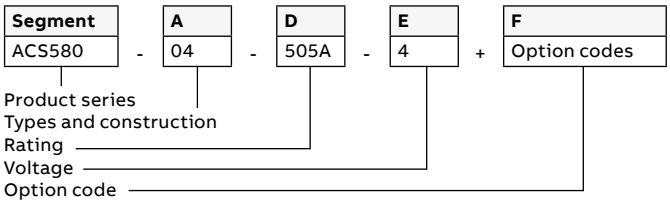
Segment	Option	Code	Description
F	Control panel and panel options	+J400	ACS-AP-S Assistant control panel (as standard)
		+J425	ACS-AP-I Assistant control panel
		+J429	ACS-AP-W Assistant control panel with a Bluetooth interface
		+J404	ACS-BP-S Basic control panel
		+J424	CDUM-01 Blank control panel cover (no control panel)
	I/O (one slot available for I/O options)	+L501	CMOD-01 External 24 V AC/DC and digital I/O extension (2×RO and 1×DO)
		+L523	CMOD-02 External 24 V AC/DC and isolated PTC interface
		+L537	CPTC-02 ATEX-certified PTC interface and external 24 V. Requires also option +Q971.
		+L512	CHDI-01 115/230 V Digital input extension (6×DI and 2×RO)
		+L500	CBAI-01 Bipolar analog I/O adapter module
	Safety	+Q971	ATEX certified safe disconnection function, EX II (2) GD. Sold only with option+L357.
	Fieldbus	+K458	FSCA-01 Modbus/RTU
		+K490	Two port FEIP-21 EtherNet/IP™
		+K492	Two port FPNO-21 PROFINET IO
		+K469	FECA-01 EtherCAT
		+K457	FCAN-01 CANopen
		+K470	FEPL-02 Ethernet POWERLINK
		+K462	FCNA-01 ControlNet
		+K451	FDNA-01 DeviceNet™
		+K491	Two port FMBT-21 Modbus TCP
		+K454	FPBA-01 PROFIBUS DP
	Embedded fieldbus	+CEIA-01	Embedded Modbus RTU adapter
		+EIA-485	(as standard)
	Construction	+B056	IP55 (UL type 12). Factory option, retro-fit not possible.
		+C135	Flange mounting kit
		+H358	Cable conduit plate, blank
	Languages: The product package includes the User interface guide and Quick installation and start-up guide in English, French, German, Italian and Spanish, and in the local language (if it is available). The option code determines the language variants of the Hardware manual and Firmware manual.	+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

Ordering information

How to built up your ordering code

ACS580-04

The type designation tells you the specifications and configuration of the drive.
The table shows the primary drive variants.
Sample type code: ACS580-04-505A-4+XXXX



Basic codes

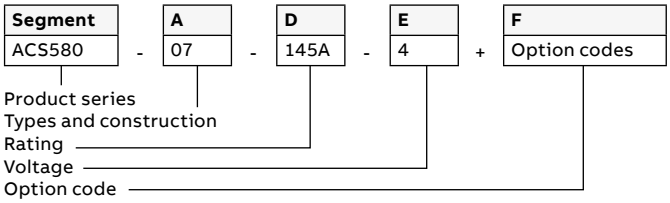
Segment	Option	Description
A	Construction	04 = Drive with coated circuit boards, integrated control unit (inside drive module), control panel door mounting kit, embedded Modbus RTU adapter, EIA-485 (standard), assistant control panel with USB-port, quick guides with default set of languages, web links to basic PC tool and manuals in quick guide
D	Current rating	Refer to the rating table
E	Voltage rating	4 = 380...480 V

Option codes

Segment	Option	Code	Description
F	Control panel and panel options	+J400	Assistant control panel (standard) / ACS-AP-S (+J400 is included in the standard delivery)
		+J425	Assistant control panel /ACS-AP-I (+J425 and +J404 replaces +J400 / ACS-AP-S)
		+J404	Basic control panel / ACS-BP-S (+J425 and +J404 replaces +J400 / ACS-AP-S)
		+0J427	No control panel holder and no control panel
			(3AXD50000016230 = Control panel mounting platform / DPMP-03)
	I/O (one slot available for I/O options) (L501, L523 and L512 available as retro-fit options)	+L501	External 24 V DC/AC and Digital I/O extension (2xRO and 1xDO) / CMOD-01
		+L523	External 24 V and isolated PTC interface / CMOD-02
		+L537	ATEX Certified PTC interface and external 24 V / CPTC-02. Requires also +Q971 option.
		+L512	115/230V Digital input (6xDI and 2xRO) / CHDI-01
		+L500	CBAI-01 Bipolar analog I/O adapter module
	Safety	+Q971	ATEX-certified Safe Disconnection Function, EX II (2) GD / CPTC-02 (+Q971 option sold only together with +L537 option)
	Fieldbus (One fieldbus adapter supported. Fieldbus adapters available as loose options for retro-fit.)	+K458	FSCA-01 Modbus/RTU
		+K490	Two port FEIP-21 EtherNet/IP™
		+K492	Two port FPNO-21 PROFINET IO
		+K469	FECA-01 EtherCAT
		+K457	FCAN-01 CANopen
		+K470	FEPL-02 Ethernet POWERLINK
		+K462	FCNA-01 ControlNet
		+K451	FDNA-01 DeviceNet™
		+K491	Two port FMBT-21 Modbus TCP
		+K454	FPBA-01 PROFIBUS DP
	Construction	+J410	Control panel door mounting kit (+J410 Includes DPMP-03)
		+B051	IP20 Finger safe
		+H370	Full-size input terminals
		+0H371	No full size output terminals
	Filters	+E210	EMC/RFI-filter, C3, 2nd Environment, Unrestricted (Earthed & Unearthed Networks)
		+E208	Common mode filter
	Languages: Standard delivery includes quick installation and commissioning guide. Full set of manuals include separate full hardware manual and full software manual.	+R700	English
		+R701	German
		+R702	Italian
		+R703	French
		+R704	Spanish
		+R705	Chinese

ACS580-07

The type designation tells you the specifications and configuration of the drive.
The table shows the primary drive variants.
Sample type code: ACS580-07-145A-4+XXXX



Basic codes

Segment	Option	Description
A	Construction	07 = Cabinet-built, IP21, Main switch and aR fuses, Assistant control panel (ACS-AP-S), EMC filter C2 (R6-R9)/ C3 (R10-R11), Common mode filter (R10-R11), ACS580 standard control program, Safe torque-off, Boards with coating, Bottom entry and exit of cables, Cable lead through entry, One set of default electric documents in USB stick
D	Current rating	Refer to the rating table
E	Voltage rating	4 = 380…480 V

Option codes

Segment	Option	Code	Description
F	Control panel and panel options	+J429	ACS-AP-W Assistant control panel with Bluetooth interface
	I/O (one slot available for I/O options)	+L504	Additional I/O-Terminal Block
		+L501	External 24 V DC/AC and Digital I/O extension (2xRO and 1xDO)
		+L523	External 24 V and isolated PTC interface
		+L512	115/230V Digital input (6xDI and 2xRO)
		+L537	ATEX-certified thermistor protection module (requires ATEX safe disconnection function, add +Q971 to code)
	Safety	+Q971	ATEX certified safe disconnection function, EX II (2) GD (Sold only with option +L357. +Q971 requires +L537 Not available with +Q951)
		+Q951	Emergency Stop, Category 0 with opening main contactor/breaker
		+Q963	Emergency Stop, Category 0 without opening main contactor with safety relay
	Fieldbus (One fieldbus adapter supported. Note: Embedded fieldbus interface can't be used at the same time with fieldbus adapter. Fieldbus adapters available as loose options for retro-fit.)	+K458	FSCA-01 Modbus/RTU
		+K490	Two port FEIP-21 EtherNet/IP™
		+K492	Two port FPNO-21 PROFINET IO
		+K469	FECA-01 EtherCAT
		+K457	FCAN-01 CANopen
		+K470	FEPL-02 Ethernet POWERLINK
		+K462	FCNA-01 ControlNet
		+K451	FDNA-01 DeviceNet™
		+K491	Two port FMBT-21 Modbus TCP
		+K454	FPBA-01 PROFIBUS DP
	Construction	+C129	UL listed (C129 includes US type main switch and fuses,US Cable conduit entry, all components UL listed/recognized.)
		+C180	Seismic design (Seismic capability according to International building code 2012, test procedure ICC-ES AC-156. Installation level 100% of the building height and SDS <=2.0 g (SDS = installation site specific spectral acceleration response)
	Filters	+F250	Line contactor
		+F289	MCCB (for US only)
	Cabling	+H351	Top entry (additional channel for frames R6-R9, +125 mm the drive cabinet width)
			Top entry through roof (frames R10 - R11)
		+H353	Top exit (additional channel for frames R6-R9, +125mm the drive cabinet width)
			Top exit (frames R10 - R11) – additional 150 mm channel
		+H358	Cable conduit entry (UK&US version)
		+C164	Plinth 100 mm (separate delivery)
		+C179	Plinth 200 mm (separate delivery)
	Cabinet options	+G300	Cabinet heater (External supply)
		+G327	Ready Pilot light, white
		+G328	Run Pilot light, green
		+G329	Fault Pilot light, red
	Languages: Full set of printed manuals in selected language. Note: The delivered manual set may include manuals in English if the translation is not available.	+R700	English
		+R701	German
		+R702	Italian
		+R703	Dutch
		+R704	Danish
		+R705	Swedish
		+R706	Finnish
		+R707	French
		+R708	Spanish
		+R709	Portuguese (Portugal)
		+R711	Russian

Notes

Notes

Additional information
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ACS580 how-to videos

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