Low voltage AC drives

ABB general purpose drives ACS580 0.75 to 250 kW Catalog

Power and productivity
for a better world™

What does all-compatible mean for you?

The idea behind all-compatible is simple: the better a drive fits to your processes, users and business and environmental goals, the faster you start enjoying the benefits it brings.

During drive selection, you save time as the drives have many built-in features simplifying the selection process. A broad range of options provides easy extension to the drive's functionality. The simplicity carries on to the drive setup and commissioning. With a state of the art user interface and drive design, installation and setup is made easy and optimal.

The total cost of ownership and your impact on the environment is lower with the drives ensuring your processes run efficiently and reliably. The control panel and PC tool enable you to monitor and analyze the drives. As a result, you can fine-tune them to get more out of the drives and process using less energy.

The ACS580 is part of ABB's all-compatible drives portfolio. The ACS580 and other all-compatible drives share the same architecture and user interfaces, yet there is an optimal drive for virtually any application.

Once you have used one all-compatible drive, you can use them all. Your knowledge accumulates with each new installation, resulting in more efficient processes and business.

That's it. In short, all-compatible means better business sense.

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Energy savings that will bring a smile to your face

The all-compatible ACS580 general purpose drives

The wall-mounted ACS580 is an all-compatible ABB general purpose drive. It turns complicated to simple to control processes efficiently.

The drive controls a wide range of applications in different industries, and yet it requires very little setting up or commissioning. The control panel's primary settings menu with assistants provide you a smart and quick way to commission the drive and get it into action. All the essential features are built-in as standard, which reduces the need for additional hardware and simplifies drive selection. The drive is ready to control pumps, fans, conveyors, mixers and many other variable and constant torque applications.

The wall-mounted drive is also available with IP55, UL Type 12 protection class which is designed for applications exposed to dust, moisture, vibrations, and other harsh environments. The very compact IP55 protection over the whole power range is optimized to match the size of IP21 drives, with only depth increasing. The robust and protective design ensures that no additional enclosures or components are needed, which enables straightforward installation on to the wall. The IP55 drive guarantees safety of the machines and personnel while leading to savings in space, maintenance, engineering, material costs, as well as in setup and commissioning time.

What if you require even more sophisticated features? You can choose the next member of the all-compatible drives portfolio, such as the ACS880 industrial drives. The drives share the same user interfaces and options, enabling you to use the knowledge you have gained with the ACS580 drives. You increasingly keep saving time. And saving time in business means saving money and improving profit potential.

Simple is beautiful. And now, simple is also profitable.

Advanced energy efficiency with effortless simplicity

Switch on simplicity without trading off efficiency

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

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

Boosting energy efficiency
Energy optimizer and energy efficiency information help you monitor and save the energy used in your process.

The ACS580 general purpose drives are part of ABB's all-compatible drives portfolio. The drives promise you effortless energy efficiency throughout their whole life cycle.

The ACS580 drive practically guides you to set itself up. With built-in assistant functionality the user answers to questions in the selected language to set up the drive, and then the drive is fully operational.

After commissioning, the next time you will remember you own the drive is when you take a look at your new, lower energy bill.

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

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

Input/output extensions
In addition to the standard interfaces, the drive has built-in slot for additional input/output extension modules. Some of the extension modules allow for an external +24 V supply to be used.

Remote monitoring
With a built-in web server and standalone datalogger, NETA-21 enables worldwide and secure access to drives.

Human all-compatible

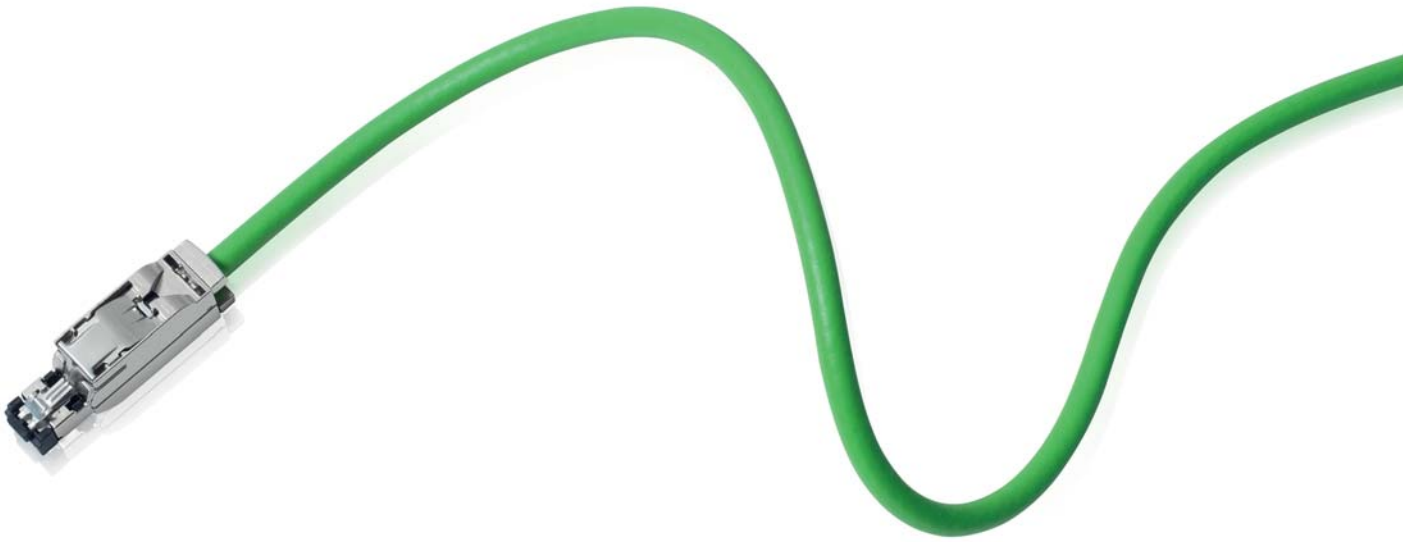
Through drive selection, installation, commissioning and use the drive is designed save your time and energy with effortless simplicity.

When using the drive, you don’t have to know all of the parameters or use any programming language. Primary settings menu with assistants and ready-made application macros provide you a smart way to set up the drive quickly. One glance at the control panel's editable home view will show you the status of the drive and process.

The Drive composer PC tool provides extensive drive monitoring and process tuning capabilities. The integrated and certified safe torque off feature means safety for machine operators.

The technology should adapt to your needs, not the other way round.

What do we mean by plug-in-ready compatibility?
Exactly what it says. Buy it, plug it in and run it.



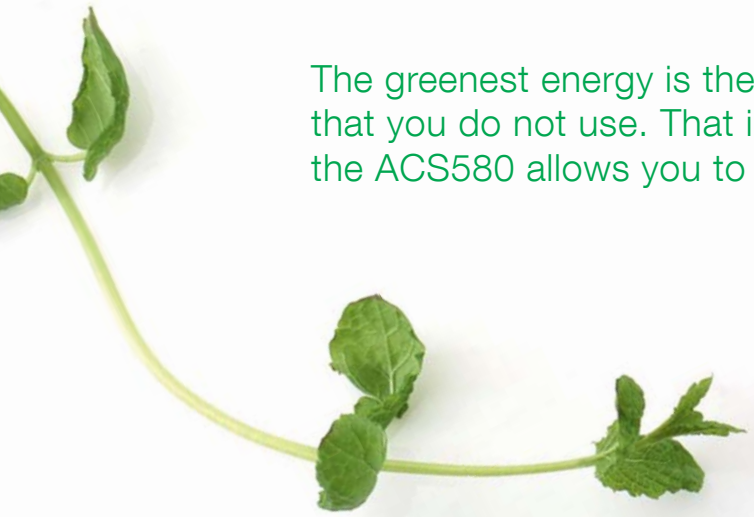
Process all-compatible

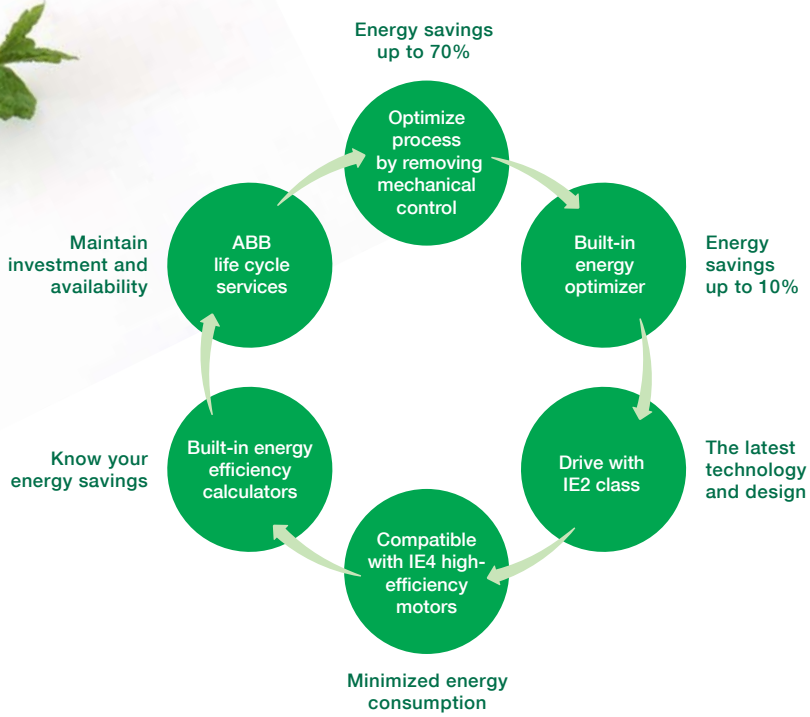
The ACS580 drives are ready for a broad range of standard drive applications, and all essential features for speed and torque control applications are built-in as standard.

The power range reaches up to 250 kW, covering a broad range of applications. The wide range of fieldbus adapter options allow communication with all of the major industrial automation networks.

If the application requires more than a general purpose drive, the common drives architecture enables the smooth transition to other all-compatible drives in the ABB portfolio, such as the ACS880 industrial drive.

The greenest energy is the energy that you do not use. That is what the ACS580 allows you to do.





Environment all-compatible

With ABB and the drives, you are not only optimizing the energy consumption of an electric motor but also your whole process.

The drive itself helps you to use only the exact amount of energy needed to run your motor. The energy optimizer feature ensures maximum torque per ampere, reducing energy drawn from the supply. The drive fulfills the highest IE2 drive (EN 50598-2) energy efficiency class and is compatible with high-efficiency IE4 motors, further reducing total life cycle costs. And the built-in energy efficiency calculators help you to analyze and optimize processes. With the help of our life cycle services, you will be able to keep your process running reliably and efficiently throughout the life cycle of the drives.

Business all-compatible

Usually, any drive is a justified investment that gives a short payback time by lowering energy consumption and helping improve productivity of the processes.

When you choose an all-compatible drive from ABB, you get more than just a drive.

You get our wide range of products and services to support your business, including our decades of experience in various industries. ABB's local offices are in over 90 countries and our global value provider network members will be near to you.

New technology inside, the whole ABB outside, designed to support your business.

The versatile drive for a broad range of applications

The wall-mounted ACS580 general purpose drive is designed to control a broad range of variable and constant torque applications such as pumps, fans, conveyors and mixers as well as for process control in different industries. The drive is equipped with built-in features that simplify ordering and delivery, and reduces commissioning costs since everything is provided in a single, compact and ready to use package.

All the essential features built-in

The drive provides reduced harmonics with built-in second-generation swinging choke technology in a smaller and lighter design. Other built-in features include C2 category EMC filter, brake chopper up to frame R3, Modbus RTU fieldbus interface and dual channel SIL3 safe torque off (STO). The drive and all options have coated circuit boards as standard improving durability in harsh environmental conditions.

Easy to use control panel and PC tool

The control panel and PC tool provide easy drive setup, commissioning and maintenance. The control panel's settings menu with many built-in assistants speed up commissioning, while the Drive composer PC tool offers extensive drive monitoring and process tuning capabilities.

Boosting energy efficiency

The built-in energy efficiency calculators, including used and saved kWh, CO_2 reduction and money saved, help users fine-tune processes to ensure optimal energy use. The energy optimizer control mode ensures the maximum torque per ampere, reducing energy drawn from the supply. The drive fulfills the highest IE2 drive (EN 50598-2) energy efficiency class and is compatible with high-efficiency IE4 motors, further reducing total life cycle costs. And the built-in energy efficiency calculators help you to analyze and optimize processes.

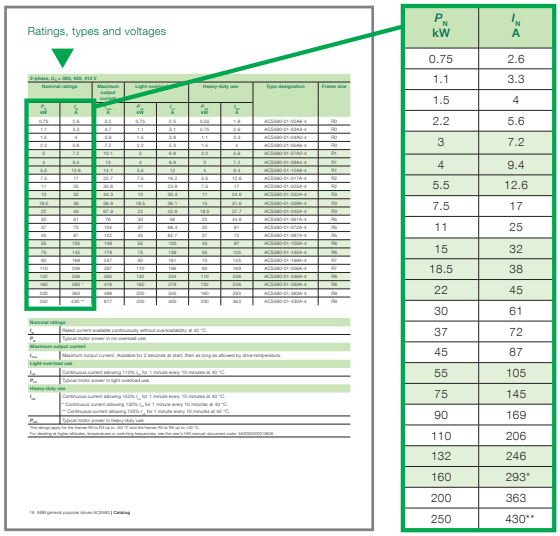
How to select a drive

It is very easy to select the right drive.

This is how you build up your own ordering code using the type designation key.

1 **Start with identifying your supply voltage.** This tells you what rating table to use. See pages 15 and 16.

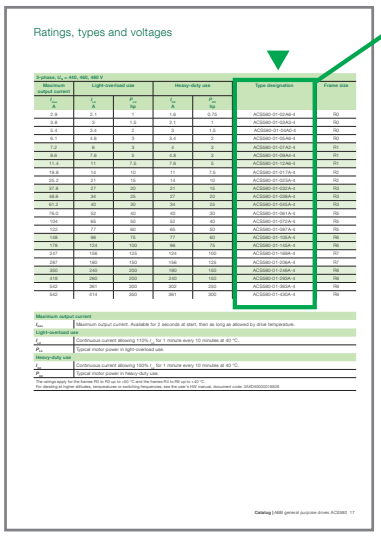
2 **Choose your motor's power and current rating** from the ratings table on pages 15 and 16.



P_N kW	I_N A
0.75	2.6
1.1	3.3
1.5	4
2.2	5.6
3	7.2
4	9.4
5.5	12.6
7.5	17
11	25
15	32
18.5	38
22	45
30	61
37	72
45	87
55	105
75	145
90	169
110	206
132	246
160	293*
200	363
250	430**

Pages 15 and 16

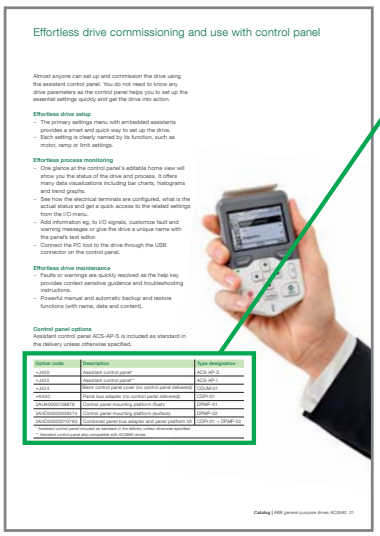
3 **Select your drive's ordering code** from the rating table based on your motor's nominal power rating.



Type designation
ACS580-01-02A6-4
ACS580-01-03A3-4
ACS580-01-04A0-4
ACS580-01-05A6-4
ACS580-01-07A2-4
ACS580-01-09A4-4
ACS580-01-12A6-4
ACS580-01-017A-4
ACS580-01-025A-4
ACS580-01-032A-4
ACS580-01-038A-4
ACS580-01-045A-4
ACS580-01-061A-4
ACS580-01-072A-4
ACS580-01-087A-4
ACS580-01-105A-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

Pages 15 and 16

4 **Choose your options** (on pages 21, 24, 25 and 30) and **add the option codes to drive's ordering code.** Remember to use a "+" mark before each option code.



Control panel options

Option code	Description	Type designation
+J400	Assistant control panel*	ACS-AP-S
+J425	Assistant control panel**	ACS-AP-I
+J424	Blank control panel cover (no control panel delivered)	CDUM-01
+K450	Panel bus adapter (no control panel delivered)	CDPI-01
3AUA0000108878	Control panel mounting platform (flush)	DPMP-01
3AXD50000009374	Control panel mounting platform (surface)	DPMP-02
3AXD50000010763	Combined panel bus adapter and panel platform kit	CDPI-01 + DPMP-02*

* Assistant control panel included as standard in the delivery unless otherwise specified.
** Assistant control panel also compatible with ACS880 drives.

Pages 21, 24, 25 and 30

Type designation: ACS580 – 01 – 03A3 – 4 + L501

- Product series
- Types and construction
- Rating
- Voltage
- Options

Technical data

Mains connection	
Voltage and power range	3-phase, U_{N4} = 380 to 480 V, +10%/-15% 0.75 to 250 kW
Frequency	50/60 Hz ±5%
Power factor	cosφ = 0.98
Efficiency (at nominal power)	98%

Motor connection	
Voltage	0 to U_N, 3-phase
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

Product compliance

CE

Low Voltage Directive 2006/95/EC, EN 61800-5-1: 2007

Machinery Directive 2006/42/EC, EN 61800-5-2: 2007

EMC Directive 2004/108/EC, EN 61800-3: 2004 + A1: 2012

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

EAC

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

Category C2 as standard

Environmental limits	
Ambient temperature	
Transport	-40 to +70 °C
Storage	-40 to +70 °C
Operation area	-15 to +40 C no derating required, no frost allowed +40 to +50 C derating required, see HW manual for more information
Cooling method	
Air-cooled	Dry clean air
Altitude	
0 to 1,000 m	Without derating
1,000 to 4,000 m	With derating of 1%/100 m
Relative humidity	5 to 95%, no condensation allowed
Degree of protection	IP21 as standard, IP55 as an optional variant
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

Frames IP21	Height**		Width		Depth		Weight	
	mm	in	mm	in	mm	in	kg	lb
R0	303	11.9	125	4.9	210	8.3	4.5	9.9
R1	303	11.9	125	4.9	223	8.8	4.6	10
R2	394	15.5	125	4.9	227	8.9	7.5	16.6
R3	454	17.9	203	8	228	9	14.9	32.8
R5	726	28.6	203	8	283	11.1	23	50.7
R6	726	28.6	252	9.9	369	14.5	45	99.2
R7	880	34.6	284	11.2	370	14.6	55	121.3
R8	965	38	300	11.8	393	15.5	70	154.4
R9	955	37.6	380	15	418	16.5	98	216.1

** Front height of the drive with glandbox

Frames IP55	Height**		Width		Depth		Weight	
	mm	in	mm	in	mm	in	kg	lb
R0	303	11.9	125	4.9	222	8.74	5.1	11.7
R1	303	11.9	125	4.9	233	9.17	5.1	11.7
R2	394	15.5	125	4.9	239	9.41	8.0	17.64
R3	454	17.9	203	8	237	9.33	15.4	33.95
R6	726	28.6	252	9.9	380	14.96	45.5	100.31
R7	880	34.6	284	11.2	381	15	55.5	122.36
R8	965	38	300	11.8	452	17.8	72	158.76
R9	955	37.6	380	15	477	18.78	100	220.5

** Front height of the drive with glandbox

Ratings, types and voltages

3-phase, U_N = 380, 400, 415 V								
Nominal ratings		Maximum output current	Light-overload use		Heavy-duty use		Type designation	Frame size
P_N kW	I_N A	I_{max} A	P_{Ld} kW	I_{Ld} A	P_{Hd} kW	I_{Hd} A		
0.75	2.6	3.2	0.75	2.5	0.55	1.8	ACS580-01-02A6-4	R0
1.1	3.3	4.7	1.1	3.1	0.75	2.6	ACS580-01-03A3-4	R0
1.5	4	5.9	1.5	3.8	1.1	3.3	ACS580-01-04A0-4	R0
2.2	5.6	7.2	2.2	5.3	1.5	4	ACS580-01-05A6-4	R0
3	7.2	10.1	3	6.8	2.2	5.6	ACS580-01-07A2-4	R1
4	9.4	13	4	8.9	3	7.2	ACS580-01-09A4-4	R1
5.5	12.6	14.1	5.5	12	4	9.4	ACS580-01-12A6-4	R1
7.5	17	22.7	7.5	16.2	5.5	12.6	ACS580-01-017A-4	R2
11	25	30.6	11	23.8	7.5	17	ACS580-01-025A-4	R2
15	32	44.3	15	30.4	11	24.6	ACS580-01-032A-4	R3
18.5	38	56.9	18.5	36.1	15	31.6	ACS580-01-038A-4	R3
22	45	67.9	22	42.8	18.5	37.7	ACS580-01-045A-4	R3
30	61	76	30	58	22	44.6	ACS580-01-061A-4	R5
37	72	104	37	68.4	30	61	ACS580-01-072A-4	R5
45	87	122	45	82.7	37	72	ACS580-01-087A-4	R5
55	105	148	55	100	45	87	ACS580-01-105A-4	R6
75	145	178	75	138	55	105	ACS580-01-145A-4	R6
90	169	247	90	161	75	145	ACS580-01-169A-4	R7
110	206	287	110	196	90	169	ACS580-01-206A-4	R7
132	246	350	132	234	110	206	ACS580-01-246A-4	R8
160	293	418	160	278	132	246 *	ACS580-01-293A-4	R8
200	363	498	200	345	160	293	ACS580-01-363A-4	R9
250	430	617	200	400	200	363 **	ACS580-01-430A-4	R9

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.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Ld} for 1 minute every 10 minutes at 40 °C. * Continuous current allowing 130% I_{Ld} for 1 minute every 10 minutes at 40 °C. ** Continuous current allowing 125% I_{Ld} for 1 minute every 10 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply for the frames R0 to R3 up to +50 °C and the frames R4 to R9 up to +40 °C.
For derating at higher altitudes, temperatures or switching frequencies, see the user's HW manual, document code: 3AXD50000018826

Ratings, types and voltages

3-phase, U_N = 440, 460, 480 V						
Maximum output current	Light-overload use		Heavy-duty use		Type designation	Frame size
I_{max} A	I_{Ld} A	P_{Ld} hp	I_{Hd} A	P_{Hd} hp		
2.9	2.1	1	1.6	0.75	ACS580-01-02A6-4	R0
3.8	3	1.5	2.1	1	ACS580-01-03A3-4	R0
5.4	3.4	2	3	1.5	ACS580-01-04A0-4	R0
6.1	4.8	3	3.4	2	ACS580-01-05A6-4	R0
7.2	6	3	4	3	ACS580-01-07A2-4	R1
8.6	7.6	5	4.8	3	ACS580-01-09A4-4	R1
11.4	11	7.5	7.6	5	ACS580-01-12A6-4	R1
19.8	14	10	11	7.5	ACS580-01-017A-4	R2
25.2	21	15	14	10	ACS580-01-025A-4	R2
37.8	27	20	21	15	ACS580-01-032A-4	R3
48.6	34	25	27	20	ACS580-01-038A-4	R3
61.2	40	30	34	25	ACS580-01-045A-4	R3
76.0	52	40	40	30	ACS580-01-061A-4	R5
104	65	50	52	40	ACS580-01-072A-4	R5
122	77	60	65	50	ACS580-01-087A-4	R5
148	96	75	77	60	ACS580-01-105A-4	R6
178	124	100	96	75	ACS580-01-145A-4	R6
247	156	125	124	100	ACS580-01-169A-4	R7
287	180	150	156	125	ACS580-01-206A-4	R7
350	240	200	180	150	ACS580-01-246A-4	R8
418	260	200	240	150	ACS580-01-293A-4	R8
542	361	300	302	250	ACS580-01-363A-4	R9
542	414	350	361	300	ACS580-01-430A-4	R9

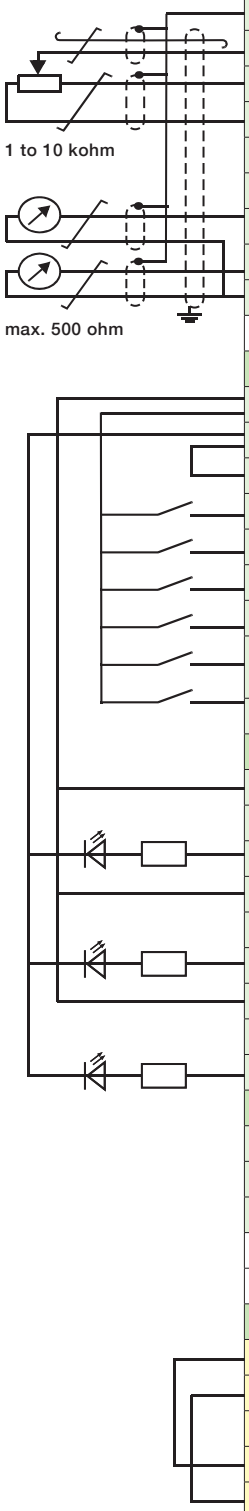
Maximum output current	
I_{max}	Maximum output current. Available for 2 seconds at start, then as long as allowed by drive temperature.
Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 10 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Ld} for 1 minute every 10 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply for the frames R0 to R3 up to +50 °C and the frames R4 to R9 up to +40 °C.
For derating at higher altitudes, temperatures or switching frequencies, see the user's HW manual, document code: 3AXD50000018826

Standard interface and extensions for plug-in connectivity

The 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 external +24 V supply with the frames R0 to R3. For further information, please see the ACS580 user's manual.

Default factory I/O connection diagram



Terminal	Meaning	Default macro connections
S1	AI1 U/I	Voltage/Current selection for analog input
S2	AI2 U/I	Voltage/Current selection for analog input
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	+10V	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
S3	AO1 I/U	Voltage/Current selection for analog output
X2 & X3	**Aux. voltage output and programmable digital inputs**	
10	+24V	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	
S4	TERM	Serial data link termination switch
S5	BIAS	Serial data link bias resistors switch
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.

Standard software with versatile features

Commissioning easier than ever before
The drive's assistant control panel has a clear and intuitive user interface as well as different assistants to make the drive simple to set up and use. This saves on commissioning and learning time.

Sophisticated process control
The ACS580 drives offer sophisticated process control in scalar and vector control modes. The drive supports a wide range of motors including induction and permanent magnet motors. Many embedded protection and other features improve performance of the motor and process.

Flying start
Flying start is available for both scalar and vector control modes. Catching a running motor, enabled by the flying start feature, is often required in applications with long freewheeling times.

Load profile
The load profile feature collects drive values such as current to a log. The log shows how the drive is operating and enables you to analyze and optimize the application.

Reduce motor noise
The drive reduces motor noise by spreading the switching frequencies over a user-specified range. User can define an allowed range of used switching frequency. As a result, the drive maximizes the actual used switching frequency based on thermal measurement. The higher used switching frequency reduces motor noise at low load without limiting full current at maximum load.

PID built-in
Built-in and stand-alone process PID makes the ACS580 a self-governing unit that requires no external logic input from the control room, but requires only an external process measurement. The sleep mode with boost functionality elevates the required level of operation momentarily eg, level or pressure of fluid, just before turning to sleep mode. This prolongs the time spent in sleep mode and saves energy.

Optimize energy use
The ACS580 drives come with features that help you save and manage energy. The energy optimizer feature operates both in scalar and vector control modes, ensuring maximum torque per ampere and reducing energy drawn from the supply. You can monitor the hourly, daily and cumulative energy consumption via kWh counters. When the drive replaces other control methods (eg. direct-online control), you can follow the saved energy, CO_2 emissions or money, and see how fast the drive brings you a return on investment.

Easy diagnostics for trouble-free operation
The control panel's diagnostics menu enables you to effectively analyze and resolve issues. You can quickly analyze why the drive is performing as it is; running, stopped or running at the present speed. Active faults, warnings and event logs are shown in the menu. The menu shows if there are any active limitations to the drive operation and gives instructions on how to resolve them. The Drive composer PC tool offers more detailed diagnosis and signal monitoring. The entry level PC tool is available for free via the ABB website.

Effortless drive commissioning and use with control panel

Almost anyone can set up and commission the drive using the assistant control panel. You do not need to know any drive parameters as the control panel helps you to set up the essential settings quickly and get the drive into action.

Effortless drive setup

– The primary settings menu with embedded assistants provides a smart and quick way to set up the drive.
– Each setting is clearly named by its function, such as motor, ramp or limit settings.

Effortless process monitoring

– One glance at the control panel's editable home view will show you the status of the drive and process. It offers many data visualizations including bar charts, histograms and trend graphs.
– See how the electrical terminals are configured, what is the actual status and get a quick access to the related settings from the I/O menu.
– Add information eg, to I/O signals, customize fault and warning messages or give the drive a unique name with the panel's text editor.
– Connect the PC tool to the drive through the USB connector on the control panel.

Effortless drive maintenance

– Faults or warnings are quickly resolved as the help key provides context sensitive guidance and troubleshooting instructions.
– Powerful manual and automatic backup and restore functions (with name, date and content).

Control panel options

Assistant control panel ACS-AP-S is included as standard in the delivery unless otherwise specified.

Option code	Description	Type designation
+J425	Assistant control panel*	ACS-AP-I
+J424	Blank control panel cover (no control panel delivered)	CDUM-01
+K450	Panel bus adapter (no control panel delivered)	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
3AXD50000010763	Combined panel bus adapter and panel platform kit	CDPI-01 + DPMP-02

* Also compatible with ACS880 drives

PC tool for drive monitoring and process tuning capabilities

The Drive composer PC tool offers fast and harmonized setup, commissioning and monitoring for the whole all-compatible drives portfolio. The free version of the tool provides startup and maintenance capabilities, while the professional version provides additional features such as custom parameter windows, control diagrams of the drive's configuration and improved monitoring and diagnostics.

The Drive composer tool is connected to the drive using the mini USB connection on the assistant control panel. All drive information such as parameter loggers, faults, backups and event lists are gathered into a support diagnostics file with a single mouse click. This provides faster fault tracking, shortens downtime and reduces operational and maintenance costs.

Drive composer pro offers extended functionality

Drive composer pro provides the same standard functionality as the free version and some additional features, like graphical control diagrams. The control diagrams save users from browsing long lists of parameters and help to set the drive's logic quickly and easily. The tool has fast monitoring capabilities of multiple signals from several drives in the panel bus. Full backup and restore functions are also included.

Remote monitoring access worldwide

The remote monitoring tool, NETA-21, gives easy access to the drive via the Internet or local Ethernet network. NETA-21 comes with a built-in web server. Compatible with standard web browsers, it ensures easy access to a web based user interface. Through the web interface, the user can configure drive parameters, monitor drive log data, load levels, run time, energy consumption, I/O data and bearing temperatures of the motor connected to the drive.

Remote monitoring option

Ordering code	Description	Type designation
3AUA0000094517	2 x panel bus interface, 2 x 32 = max. 64 drives 2 x Ethernet interface SD memory card USB port for WLAN/3G	NETA-21

ABB
Output frequency
16.78
Hz
Motor current
5.56
A
DC voltage
550.27
V
Options
Menu
Stop
Loc/Rem
Start

Flexible connectivity to automation networks

A fieldbus enables communication between drives and PLC systems, I/O devices and the process. Fieldbus communication reduces wiring costs when compared with traditional hard wired input/output connections. Fieldbus systems also offer the ability to gather large amounts of data.

The general purpose drives are compatible with a wide range of fieldbus protocols. The drive comes with Modbus RTU fieldbus interface as standard. The optional fieldbus adapters can easily be mounted inside the drive.

Drive monitoring
A set of drive parameters and/or actual signals, such as torque, speed, current, etc., can be selected for cyclic data transfer, providing fast data access.

Drive diagnostics
Accurate and reliable diagnostic information can be obtained through the alarm, limit and fault words, giving easy interfacing with plantwide HMIs.

Cabling
Substituting the large amount of conventional drive control cabling and wiring with a single cable reduces costs and increases system reliability and flexibility.

Design
The use of fieldbus control reduces engineering time at installation due to the modular structure of the hardware and software and the simplicity of the connections to the drives.

Commissioning and assembly
The modular machine configuration allows precommissioning of single machine sections and provides easy and fast assembly of the complete installation.

Universal communication with ABB fieldbus adapters
The ACS580 supports the following fieldbus protocols:

Fieldbus adapters

Option code	Fieldbus protocol	Adapter
+K454	PROFIBUS DP, DPV0/DPV1	FPBA-01
+K457	CANopen®	FCAN-01
+K451	DeviceNet™	FDNA-01
+K473	EtherNet/IP™, Modbus TCP, PROFINET IO	FENA-11
+K475	Two port EtherNet/IP™, Modbus TCP, PROFINET IO	FENA-21
+K469	EtherCAT®	FECA-01
+K458	Modbus RTU	FSCA-01
+K470	PowerLink	FEPL-02
+K462	ControlNet	FCNA-01

Input/output extension modules for increased connectivity

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 slots located on the drive.

The CMOD options also enable connection to an external +24 V supply, which allows the control panel, control board, fieldbus and I/O to stay on when mains supply is cut off. With the external supply, drive diagnosis and fault finding can still be carried out.

I/O options

Option code	Description	Type designation
+L501	External 24 V AC and DC 2 x RO and 1 x DO	CMOD-01
+L523	External 24 V and isolated PTC interface	CMOD-02
+L512	115/230 V digital input 6 x DI and 2 x RO	CHDI-01

Brake options

Brake chopper

The brake chopper is built-in as standard for the ACS580 frames up to R3. Braking control is integrated into the ACS580 drives. It not only controls braking, but also supervises system status and detects failures such as brake resistor and resistor cable short-circuits, chopper short-circuit, and calculated resistor over-temperature.

Brake resistor

The brake resistors are separately available for the ACS580. Resistors other than the standard option resistors may be used, provided that the specified resistance value is within specified limits and that the heat dissipation capacity of the resistor is sufficient for the drive application (see user's manual). No separate fuses in the brake circuit are required if the conditions for eg, the mains cable is protected with fuses and no mains cable/fuse overrating takes place.

EMC – electromagnetic compatibility

Each ACS580 drive is equipped with a built-in filter to reduce high frequency emissions. The drive complies with **C2** as standard.

EMC standards

The EMC product standard (EN 61800-3) covers the specific EMC requirements stated for drives (tested with motor and cable) within the EU. EMC standards such as EN 55011 or EN 61000-6-3/4 are applicable to industrial and domestic equipment and systems including components inside the drive. Drive units complying with the requirements of EN 61800-3 are compliant with comparable categories in EN 55011 and EN 61000-6-3/4, but not necessarily vice versa. EN 55011 and EN 61000-6-3/4 do not specify cable length or require a motor to be connected as a load. The emission limits are comparable to EMC standards according to the table below.

Domestic environments versus public low voltage networks

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

Comparison of EMC standards

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

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 above the maximum ambient temperature of 50 °C for the frames R0 to R3 and 40 °C for the frames R4 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.

Cooling air flow and recommended input protection fuses for 380 to 415 V units

Type designation	Frame size	Cooling air flow 380 to 415 V units					Recommended input protection fuses for 380 to 415 V units**			
		Heat dissipation		Air flow		Max. noise level*	IEC fuses		UL fuses	
		W	BTU/Hr	m³/h	ft³/min	dBA	A	Fuse type	A	Fuse type
ACS580-01-02A6-4	R0	45	155	TBA	TBA	TBA	4	gG	6	UL Class T
ACS580-01-03A3-4	R0	55	187	TBA	TBA	TBA	6	gG	6	UL Class T
ACS580-01-04A0-4	R0	66	224	TBA	TBA	TBA	6	gG	6	UL Class T
ACS580-01-05A6-4	R0	84	288	TBA	TBA	TBA	10	gG	10	UL Class T
ACS580-01-07A2-4	R1	106	362	TBA	TBA	TBA	10	gG	10	UL Class T
ACS580-01-09A4-4	R1	133	454	TBA	TBA	TBA	16	gG	15	UL Class T
ACS580-01-12A6-4	R1	174	593	TBA	TBA	TBA	16	gG	15	UL Class T
ACS580-01-017A-4	R2	228	777	TBA	TBA	TBA	25	gG	20	UL Class T
ACS580-01-025A-4	R2	322	1100	TBA	TBA	TBA	32	gG	30	UL Class T
ACS580-01-032A-4	R3	430	1469	TBA	TBA	TBA	40	gG	35	UL Class T
ACS580-01-038A-4	R3	525	1791	TBA	TBA	TBA	50	gG	45	UL Class T
ACS580-01-045A-4	R3	619	2114	TBA	TBA	TBA	63	gG	50	UL Class T
ACS580-01-061A-4	R5	1153	3938	280	165	62	80	gG	80	UL Class T
ACS580-01-072A-4	R5	1153	3938	280	165	62	100	gG	90	UL Class T
ACS580-01-087A-4	R5	1156	3948	280	165	62	100	gG	110	UL Class T
ACS580-01-105A-4	R6	1331	4546	435	256	67	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	550	324	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	1150	677	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	700	gG	600	UL Class T

* 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 ACS580 user's manual, document code: 3AUA0000076333

Need a motor? This is our offering.

From standard induction to high-efficiency IE4 motors, our wide range of IEC low voltage motors offers you a solution for all purposes. Combining the best available materials with superior technology, the motors are designed to operate reliably and efficiently no matter how challenging the process or application. The motors fulfil all national mandatory efficiency regulations.

We can help you choose both the motor and drive, ensuring you will get the optimal performance, reliability and efficiency throughout the life cycle of the motor-drive system.

ABB motor offering can be divided into four main categories:

Standard low voltage motors
Process performance and General performance motors, up to 1 200 kW.

Motors for explosive atmospheres
Available in all protection types, up to 1 000 kW.

Frequency controlled motors
Frequency controlled motors are used with a drive in variable speed use. Includes synchronous reluctance motors, permanent magnet motors, roller table motors and high dynamic power motors.

Wide range of motors for other applications
Low voltage motors are available for several other special applications like marine motors, water cooled motors, brake motors, motors for high ambient temperatures, smoke extraction motors, traction motors.

Taking care of your drives, caring about your business

Whether a drive is a part of the product you sell or a component in your production process, reliable and efficient drive operation is key. Our global life cycle services are designed to ensure that the drives keep running exactly as you expect, wherever they are.

You will find support from your first meeting with ABB to the drive installation, commissioning and maintenance, all the way up to the eventual drive replacement and recycling. With offices in over 90 countries, we are well placed to offer you technical advice and local support.

Installation and commissioning

ABB together with authorized value providers offer accurate advice and timely support before and during installation. ABB-certified engineers or third-party channel companies can adjust the drive parameters to meet the precise demands of the application.

Extended warranty

Three or five years warranty options are available to reduce risks associated with drives failure and to allow users to recover from equipment failures as quickly as possible. Services are provided at a fixed cost and standard warranty terms and conditions applied.

Extended warranty	Option code
Extended warranty to 3 years from delivery	+P931
Extended warranty to 5 years from delivery	+P932

ABB drive care contract

Through this service contract the full range of services are offered to you at a fixed price. Our service contract is designed to satisfy your most demanding requirements, ranging from technical support to maintenance and repairs.

We can help you better when we know where you are!

Register your drive at **www.abb.com/drivereg** for extended warranty options and other benefits.

When registering a drive you get:

Drive repairs or replacements

On-line access to product manuals

Technical support

Free e-learning material

Drive registration webpage
www.abb.com/drivereg

Contact us

www.abb.com/ACS580
www.abb.com/drives
www.abb.com/drivespartners
www.abb.com/motors&generators

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Specifications subject to change without notice.

Online manuals for the ACS580 drives

Video: How to install the ACS580 drive

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