



Low voltage AC drives

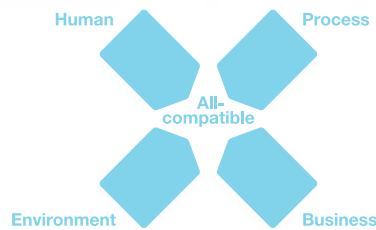
ABB industrial drives ACS880, single drives 0.55 to 2800 kW Catalog

What does all-compatible mean for you?

Being all-compatible means that drive choice should add value to your business. Drives should meet the unique demands of your processes, help you save energy and reduce operating costs. Also, all-compatible means that our drives are easy to select, use and maintain. These are the cornerstones making our industrial drive series the all-compatible choice.

Contents

3	The all-compatible ACS880 series drives
4	Simplifying your world without limiting your possibilities
5	Single drives, ACS880
6	Human all-compatible
7	Process all-compatible
8	Environment all-compatible
9	Business all-compatible
10	How to select a drive
10	Technical data
11	Wall-mounted single drives, ACS880-01
12-13	Ratings, types and voltages, ACS880-01
14	Cabinet-built single drives, ACS880-07
15-16	Ratings, types and voltages, ACS880-07
17	Standard interface and extensions for comprehensive connectivity
18	Standard software for scalable control and functionality
19	Ready made programs for application control
20	Intuitive human-machine interface
21	PC tool for easy startup and maintenance
22	Integrated safety simplifies configuration
23	Drive application programming with CODESYS
24	Flexible connectivity to automation networks
25	Input/output extension modules for increased connectivity
25	Speed feedback interfaces for precise process control
25	I/O option extension adapter
25	DDCS communication option modules
25	Remote monitoring access worldwide
26	EMC – electromagnetic compatibility
27	Brake options
27-28	Brake options, ACS880-01
29	Brake options, ACS880-07
30-31	du/dt filters
32	Dimensioning tool for selecting the optimal drive
34-35	Summary of features and options
36	Expertise at every stage of the value chain
37	Secure uptime throughout the drive life cycle



The all-compatible ACS880 series drives

The ACS880 series drives are part of ABB's all-compatible drives portfolio. Compatible with virtually all types of processes, automation systems, users and business requirements they are designed to tackle any motor-driven application, in any industry, whatever the power range. The innovation behind all-compatibility is our new drives architecture that simplifies operation, optimizes energy efficiency and helps maximize process output. The ACS880 series consists of single drives, multidrives and drive modules.

Simplifying your world without limiting your possibilities

Wide range of safety features

Safe torque off is built-in as standard. An optional safety functions module provides extended safety functions, simplifying the configuration and reducing installation space.



Drive application programming

Customizable to meet the precise application needs using CODESYS programming. The drive is also easy to integrate with other ABB components such as PLC and HMI.



Direct torque control (DTC)

ABB's signature motor control technology provides precise speed and torque control for all applications and virtually any type of AC motor.



Application control programs

A range of ready-made programs to optimize application productivity and usability.

Removable memory unit

Stores all the software and parameter configurations in an easily replaceable and simple-to-install module.



Energy efficiency

The drive provides features such as an energy optimizer and energy efficiency information that help you monitor and save energy used in the processes.



Remote monitoring

With a built-in web server, NETA-21 enables worldwide access to drives.

Drive-to-drive link

Allows fast communication between drives including master-follower configurations without any additional hardware.



Single drives, ACS880

The all-compatible drives are designed to provide customers across industries and applications with unprecedented levels of compatibility and flexibility.

Our ACS880 single drives are stand alone drives. They are customized to meet the precise needs of industries such as oil and gas, mining, metals, chemicals, cement, power plants, material handling, pulp and paper, sawmills and marine. They control a wide range of applications such as cranes, extruders, winches, winders, conveyors, mixers, compressors, pumps and fans.



Intuitive human-machine interface

Intuitive, high-contrast and high-resolution display enabling easy navigation in multiple languages.



Startup and maintenance tool

PC tool for drive startup, configuration and daily use and process tuning. PC tool is connected to the drive via Ethernet or USB interface.



Communication with all major automation networks

Fieldbus adapters enable connectivity with all major automation networks.



Extended connectivity

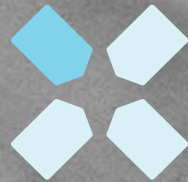
In addition to the standard interfaces, the drive has three built-in slots for additional input/output extension modules and speed feedback interfaces.

Flexible product configurations

Drives are built to order with a wide range of options such as EMC filters, braking options and different enclosure variants.



Human all-compatible



The new drives share easy-to-use interfaces saving you time during drive commissioning and maintenance. When you have learned it once, you can use it with all the drives in our all-compatible drives portfolio.

The new control panel supports over 20 languages. The new PC tool provides extensive drive monitoring capabilities and quick access to the drive settings. Integrated and certified safety features provide safety for machine operators.



Process all-compatible

The drives are compatible with all kinds of processes. They control virtually any type of AC motor, provide extensive input/output connectivity and support all major fieldbus protocols. The drives cover a wide voltage and power range. Control performance is scalable from basic to demanding applications delivered by direct torque control (DTC). The flexibility and scalability of the drives enable one drive platform to control virtually any application or process, making your drive selection easy.



Environment all-compatible

There is an increased demand for reducing industries' impact on the environment. Our drives can help you reduce energy consumption in a wide range of applications. The new drives have an energy optimizer feature that ensures maximum torque per ampere, reducing energy drawn from the supply. The built-in energy efficiency calculators help you to analyze and optimize processes. We can help you to investigate the energy saving potential of selected applications with our six-step energy appraisal. Our services expand through the life cycle of the drive and help you maintain energy efficiency from installation and commissioning to drive replacement.





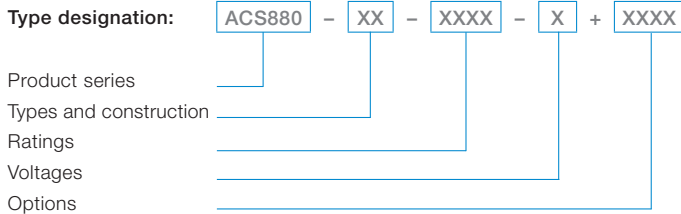
Business all-compatible



The new all-compatible drives are not just equipment but part of your business strategy. Providing better control over your processes, the new drives equal lower energy consumption, improved productivity, flexibility and ease of use. In addition to drives we offer a wide range of products and services to support your business. With offices in over 90 countries and a global technical partner network, we are in a good position to offer technical advice and local support, worldwide.

How to select a drive

Many of the features for the ACS880 single drives are built-in as standard, making selection easy. A wide range of options are available to optimize the drive for different requirements. To choose the right drive for your application, please refer to the rating tables on page 12, 13, 15 and 16 or use ABB's DriveSize dimensioning tool (page 19). The selected drive



has a unique type designation, which identifies the drive by construction, power and voltage range. The options are added to the type designation with a "plus" code. Build up your own ordering code using the type designation key or contact your local ABB drives sales office and let them know your needs/requirements.



Technical data

Mains connection

Voltage and power range	3-phase, U_{N2} = 208 to 240 V, +10/-15% (-01) 3-phase, U_{N3} = 380 to 415 V, +10/-15% (-01), ±10% (-07) 3-phase, U_{N5} = 380 to 500 V, +10/-15% (-01), ±10% (-07) 3-phase, U_{N7} = 525 to 690 V, +10/-15% (-01), ±10% (-07) 0.55 to 250 kW (-01) 45 to 2800 kW (-07)
Frequency	50/60 Hz ±5%
Power factor	$\cos\phi_f$ = 0.98 (fundamental) $\cos\phi$ = 0.93 to 0.95 (total)
Efficiency (at nominal power)	98%

Motor connection

Voltage	3-phase output voltage 0 to U_{N2} / U_{N3} / U_{N5} / U_{N7}
Frequency	0 to ±500 Hz ^{1) 2)}
Motor control	Direct torque control (DTC)
Torque control:	Torque step rise time: Open loop <5 ms with nominal torque Closed loop <5 ms with nominal torque Non-linearity: Open loop ± 4% with nominal torque Closed loop ± 3% with nominal torque
Speed control:	Static accuracy: Open loop 10% of motor slip Closed loop 0.01% of nominal speed Dynamic accuracy: Open loop 0.3 to 0.4% seconds with 100% torque step Closed loop 0.1 to 0.2% seconds with 100% torque step

Product compliance

- CE
- Low Voltage Directive 2006/95/EC
- Machinery Directive 2006/42/EC
- EMC Directive 2004/108/EC
- Quality assurance system ISO 9001 and Environmental system ISO 14001
- RoHS
- UL ³⁾, EAC/GOST R ⁷⁾, cUL 508A or cUL 508C ³⁾ and CSA C22.2 NO.14-10 ⁸⁾, C-Tick
- Functional safety: STO TÜV Nord certificate ⁴⁾
- ATEX-certified Safe Disconnection Function, Ex II (2) GD (for -01)
- Marine type approvals for -01 ⁶⁾

EMC according to EN 61800-3 (2004)

Categories C3 and C2 with internal option

Environmental limits

Ambient temperature	Transport -40 to +70 °C Storage -40 to +70 °C Operation (air-cooled) -15 to +55 °C, no frost allowed (-01) 0 to +50 °C, no frost allowed (-07) +40 to 55 °C with derating (-01) ⁵⁾ +40 to 50 °C with derating of 1%/1 °C (-07)
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	IP20 Option (-01) IP21 Standard (-01) IP22 Standard (-07) IP42, IP54 Option (-07) IP55 Option (-01)
Paint color	RAL 9017/9002 (-01), RAL 9017/7035 (-07)
Contamination levels	No conductive dust allowed
Storage	IEC 60721-3-1, Class 1C2 (chemical gases), Class 1S2 (solid particles)
Transportation	IEC 60721-3-2, Class 2C2 (chemical gases), Class 2S2 (solid particles)
Operation	IEC 60721-3-3, Class 3C2 (chemical gases), Class 3S2 (solid particles)
Functional safety	Standard Safe torque off (STO according EN/IEC 61800-5-2) IEC 61508 ed2: SIL 3, IEC 61511: SIL 3, EN/IEC 62061: SIL CL 3, EN ISO 13849-1: PL e With internal safety option (FSO-11) Safe stop 1 (SS1), safely-limited speed (SLS), safe stop emergency (SSE), safe brake control, (SBC) and safe maximum speed (SMS) EN/IEC 61800-5-2, EN/IEC 61508 ed2: SIL 3, IEC 61511: SIL 3, EN/IEC 62061: SIL CL 3, EN ISO 13849-1: PL e TÜV Nord certified ⁴⁾

C = Chemically active substances

S = Mechanically active substances

¹⁾ For higher operational output frequencies please contact your local ABB office

²⁾ Operation above 150 Hz might require type specific derating, please contact your local ABB office

³⁾ Pending; -07 (R10 to R11), -01 (R8 to R9, IP55)

⁴⁾ Please check availability for -07

⁵⁾ Please see pages 12 to 13 for further details

⁶⁾ Pending

⁷⁾ EAC will replace GOST R

⁸⁾ CSA pending -01 (230 V R4 to R8)

Wall-mounted single drives, ACS880-01

Our wall-mounted drives are designed on ABB's common drives architecture. They are customized to the precise needs of industries such as oil and gas, mining, metals, chemicals, cement, power plants, material handling, pulp and paper, sawmills and marine. They are designed to control a wide range of applications including cranes, extruders, winches, winders, conveyors, mixers, compressors, pumps and fans. The drive comes in nine different frame sizes (R1 to R9) for easy installment and commissioning.

At the heart of the drive is direct torque control (DTC), ABB's premier motor control technology. The extensive range of options include EMC filters, encoders, resolvers, du/dt filters, sine filters, chokes and brake resistors, as well as application specific software. Built-in safety features reduce the need for external safety components.

Multiple drives can be daisy-chained for synchronized drive-to-drive communication. The drives offering includes enclosure classes IP20, IP21 and IP55 for dusty and wet environments.

ABB provides an extensive selection of support documentation for planning including dimension drawings in different formats, EPLAN P8 macros and line apparatus selection tool for selecting external components on the line side and motor side of the drive.

The type approved ACS880-01 marine drive, provides advanced reliability and availability at sea. The drive fulfils marine and offshore requirements and the design and operations have been tested according to marine type approval requirements. ACS880-01 comes with marine type approval from various key classification bodies.

Main features include

- Enclosure classes IP20, IP21 and IP55 for different environments
- Compact design for easy installation, commissioning and maintenance
- Integrated safety including safe torque off (STO) as standard and the optional safety functions module, FSO-11 (TÜV Nord certified)
- Supports various motor types including synchronous reluctance motors
- Intuitive control panel with USB connection
- Removable memory unit for easy maintenance
- Drive composer PC tool for commissioning and configuration
- Primary control program - common software used throughout the ACS880 drive series
- Control unit supporting a wide range of fieldbuses, feedback devices and input/output options
- Coated boards as standard
- Controllable cooling fan
- Incoming air temperature measurement for protecting the drive from different temperature related failure mechanisms
- Built-in braking chopper, option for frame sizes R5 to R9
- EMC filter option
- du/dt filter option for motor protection
- Built-in choke
- Supporting optimized cabinet mounting with option (+P940)
- ACS880-01 single drives are optimized for easy and cost efficient cabinet installation



ACS880-01,
frame sizes R1 to R9, IP21



ACS880-01,
frame sizes R1, R8 and R5, IP20



ACS880-01,
frame sizes R1, R8 and R5, IP55

Ratings, types and voltages

Wall-mounted drives, ACS880-01

$U_N = 690$ V (range 525 to 690 V). The power ratings are valid at nominal voltage 690 V (4 to 250 kW).

Nominal ratings			Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
I_N A	I_{max} A	P_N kW	I_{Ld} A	P_{Ld} kW	I_{Hd} A	P_{Hd} kW	dBA	W	m ³ /h		
7.3	12.2	5.5	6.9	5.5	5.6	4	62	217	280	ACS880-01-07A3-7	R5
9.8	18	7.5	9.3	7.5	7.3	5.5	62	284	280	ACS880-01-09A8-7	R5
14.2	22	11	13.5	11	9.8	7.5	62	399	280	ACS880-01-14A2-7	R5
18	29	15	17	15	14.2	11	62	490	280	ACS880-01-018A-7	R5
22	44	18.5	21	18.5	18	15	62	578	280	ACS880-01-022A-7	R5
26	54	22	25	22	22	18.5	62	660	280	ACS880-01-026A-7	R5
35	64	30	33	30	26	22	62	864	280	ACS880-01-035A-7	R5
42	70	37	40	37	35	30	62	998	280	ACS880-01-042A-7	R5
49	71	45	47	45	42	37	62	1120	280	ACS880-01-049A-7	R5
61	104	55	58	55	49	45	67	1295	435	ACS880-01-061A-7	R6
84	124	75	80	75	61	55	67	1440	435	ACS880-01-084A-7	R6
98	168	90	93	90	84	75	67	1940	450	ACS880-01-098A-7	R7
119	198	110	113	110	98	90	67	2310	450	ACS880-01-119A-7	R7
142	250	132	135	132	119	110	65	3300	550	ACS880-01-142A-7	R8
174	274	160	165	160	142	132	65	3900	550	ACS880-01-174A-7	R8 ³⁾
210	384	200	200	200	174	160	68	4800	1150	ACS880-01-210A-7	R9 ⁷⁾
271	411	250	257	250	210	200	68	6000	1150	ACS880-01-271A-7	R9 ⁵⁾

Nominal ratings

I_N	Rated current available continuously without overloadability at 40 °C.
P_N	Typical motor power in no-overload use.
I_{max}	Maximum output current. Available for 10 seconds at start, then as long as allowed by drive temperature.

Light-overload use

I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 min/5 min at 40 °C.
P_{Ld}	Typical motor power in light-overload use.

Heavy-duty use

I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 min/5 min at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply at 40 °C ambient temperature. At higher temperatures (up to 55 °C) the derating is 1%/1 °C.

¹⁾ 130% overload

²⁾ 125% overload

³⁾ For drives with enclosure class IP55 the ratings apply at 40 °C ambient temperature. At higher temperature the derating is from 40 to 45 °C 1%/1 °C and 45 to 55 °C 2.5%/1 °C.

⁴⁾ For drives with enclosure class IP55 the ratings apply at 40 °C ambient temperature. At higher temperature the derating is from 40 to 50 °C 1%/1 °C and 50 to 55 °C 2.5%/1 °C.

⁵⁾ For drives with enclosure class IP55 the maximum ambient temperature is 35 °C.

⁶⁾ For drives with enclosure class IP55 the ratings apply at 40 °C ambient temperature. At higher temperatures the derating is from 40 to 45 °C 1%/1 °C and 45 to 50 °C 2.5%/1 °C and 50 to 55 °C 5%/1 °C.

⁷⁾ For drives with IP55 enclosure class the ratings apply at 40 °C ambient temperature. At higher temperatures the derating is from 40 to 45 °C 3.5%/1 °C. Note: Maximum ambient temperature is 45 °C.

Frame size	Height 1 IP21 (mm)	Height 2 IP20/IP21 (mm)	Width (mm)	Depth IP20 (mm)	Depth IP21 (mm)	Weight IP20 (kg)	Weight IP21 (kg)
R1	405	370 ⁸⁾	155	226	226	5.7	6
R2	405	370 ⁸⁾	155	249	249	7.2	8
R3	471	420 ⁸⁾	172	256	261	9.4	10
R4	573	490 ⁸⁾	203	333	274	16.1	18.5
R5	730	596 ⁸⁾	203	333	274	19.3	23
R6	726	569	251	411	357	38.3	45
R7	880	600	284	413	365	47.6	55
R8	963	681	300	436	386	58.6	70
R9	955	680	380	461	413	85.2	98

H1 = Height with cable entry box

H2 = Height without cable entry box

Width and depth with cable entry box

⁸⁾ Comes with main power clamp (Note: only IP20 variant)

Frame size	Height IP55 (mm)	Width IP55 (mm)	Depth IP55 (mm)	Weight IP55 (kg)
R1	450	162	295	6
R2	450	162	315	8
R3	525	180	327	10
R4	576	203	344	18.5
R5	730	203	344	23
R6	726	251	421	45
R7	880	284	423	55
R8	963	300	452	72
R9	955	380	477	100

Cabinet-built single drives, ACS880-07

Our cabinet-built single drives are built to order, meeting customer needs despite any technical challenges. Designed on ABB's common drives architecture, this compact drive comes in different sizes for easy assembly and commissioning.

These single drives are customized to the precise needs of industries such as oil and gas, mining, metals, chemicals, cement, power plants, material handling, pulp and paper, woodworking and marine. Typical applications include cranes, extruders, winches, conveyors, mixers, compressors, pumps and fans. The drive configuration contains a rectifier, DC link, inverter, fuses and a main switch, all built into a compact cabinet. The features and options include extended inputs and outputs, fieldbus options, du/dt filtering, EMC filtering and a brake resistor.

Induction motors, synchronous motors and induction servo motors are all supported as standard without the need for additional software. The drive can control the motors in either open loop or closed loop, through its high precision motor control platform, direct torque control (DTC). Built-in safety features reduce the need for external safety components.

Main features include

- Compact design for easy cabinet assembly and maintenance
- Main switch and fuses
- Cabling solutions include bottom and top entry and exit
- Enclosure classes IP22, IP42 and IP54 for different environments, with option for air intake through bottom of the cabinet and channeled air outlet on the top of the cabinet

- Integrated safety including safe torque off (STO) as standard and the optional safety functions module, FSO-11 (TÜV Nord certificate)
- Supports various motor types including synchronous reluctance motors
- Drive composer PC tool for commissioning and configuration
- Intuitive and easy to operate control panel with USB connection
- Device panel for optional switches and pilot light
- Primary control program – common software used throughout the ACS880 drive series
- Control unit supporting a wide range of fieldbuses, feedback devices and input/output options
- Removable memory unit for easy maintenance
- Coated boards as standard
- Extensive, programmable digital and analog inputs and outputs
- Long lifetime capacitors
- Cooling fans with speed control or on-off control
- Braking option inside the module or cabinet
- EMC filter option
- du/dt and common mode filter options for motor protection
- Cabinet light and heater option



ACS880-07, frame sizes R6 to R8 and R11, IP22



ACS880-07, frame size 1xD8T+2xR8i, IP22

Ratings, types and voltages

Cabinet-built drives, ACS880-07

$U_N = 400\text{ V}$ (range 380 to 415 V). The power ratings are valid at nominal voltage 400 V (45 to 1400 kW).

Nominal ratings			Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
I_N A	I_{max} A	P_N kW	I_{Ld} A	P_{Ld} kW	I_{Hd} A	P_{Hd} kW	dBA	W	m ³ /h		

6-pulse diode

105	148	55	100	55	87	45	67	1795	435	ACS880-07-0105A-3	R6
145	178	75	138	75	105	55	67	1940	435	ACS880-07-0145A-3	R6
169	247	90	161	90	145	75	67	2440	450	ACS880-07-0169A-3	R7
206	287	110	196	110	169	90	67	2810	450	ACS880-07-0206A-3	R7
246	350	132	234	132	206	110	65	3800	550	ACS880-07-0246A-3	R8
293	418	160	278	160	246 ¹⁾	132	65	4400	550	ACS880-07-0293A-3	R8
363	498	200	345	200	293	160	68	5300	1150	ACS880-07-0363A-3	R9
430	545	250	400	200	363 ²⁾	200	68	6500	1150	ACS880-07-0430A-3	R9
505	560	250	485	250	361	200	72	5602	1200	ACS880-07-0505A-3	R10
585	730	315	575	315	429	250	72	6409	1200	ACS880-07-0585A-3	R10
650	730	355	634	355	477	250	72	8122	1200	ACS880-07-0650A-3	R10
725	1020	400	715	400	566	315	72	8764	1200	ACS880-07-0725A-3	R11
820	1020	450	810	450	625	355	72	9862	1200	ACS880-07-0820A-3	R11
880	1100	500	865	500	725 ¹⁾	400	71	10578	1420	ACS880-07-0880A-3	R11
1140	1482	630	1072	560	786	400	73	18000	4290	ACS880-07-1140A-3	1xD8T+2xR8i
1480	1930	800	1421	800	1107	630	74	25000	5720	ACS880-07-1480A-3	2xD8T+2xR8i
1760	2120	1000	1690	900	1316	710	74	29000	5720	ACS880-07-1760A-3	2xD8T+2xR8i
2610	3140	1400	2506	1400	1952	1000	76	44000	8580	ACS880-07-2610A-3	3xD8T+3xR8i

12-pulse diode

990	1287	560	950	500	741	400	73	15000	5720	ACS880-07-0990A-3+A004	2xD7T+2xR8i
1480	1930	800	1421	800	1107	630	74	25000	5720	ACS880-07-1480A-3+A004	2xD8T+2xR8i
1760	2120	1000	1690	900	1316	710	74	29000	5720	ACS880-07-1760A-3+A004	2xD8T+2xR8i
2610	3140	1400	2506	1400	1952	1000	76	44000	10010	ACS880-07-2610A-3+A004	4xD8T+3xR8i

$U_N = 500\text{ V}$ (range 380 to 500 V). The power ratings are valid at nominal voltage 500 V (45 to 1400 kW).

Nominal ratings			Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
I_N A	I_{max} A	P_N kW	I_{Ld} A	P_{Ld} kW	I_{Hd} A	P_{Hd} kW	dBA	W	m ³ /h		

6-pulse diode

96	148	55	91	55	77	45	67	1795	435	ACS880-07-0096A-5	R6
124	178	75	118	75	96	55	67	1940	435	ACS880-07-0124A-5	R6
156	247	90	148	90	124	75	67	2440	450	ACS880-07-0156A-5	R7
180	287	110	171	110	156	90	67	2810	450	ACS880-07-0180A-5	R7
240	350	132	228	132	180	110	65	3800	550	ACS880-07-0240A-5	R8
260	418	160	247	160	240 ¹⁾	132	65	4400	550	ACS880-07-0260A-5	R8
361	542	200	343	200	302	200	68	5300	1150	ACS880-07-0361A-5	R9
414	542	250	393	250	361 ²⁾	200	68	6500	1150	ACS880-07-0414A-5	R9
460	560	315	450	315	330	200	72	4403	1200	ACS880-07-0460A-5	R10
503	560	355	483	315	361	250	72	5602	1200	ACS880-07-0503A-5	R10
583	730	400	573	400	414	250	72	6409	1200	ACS880-07-0583A-5	R10
635	730	450	623	450	477	315	72	8122	1200	ACS880-07-0635A-5	R10
715	850	500	705	500	566	400	72	8764	1200	ACS880-07-0715A-5	R11
820	1020	560	807	560	625	450	71	9862	1200	ACS880-07-0820A-5	R11
1070	1391	710	1027	710	800	560	73	18000	4290	ACS880-07-1070A-5	1xD8T+2xR8i
1320	1716	900	1267	900	987	710	74	22000	5720	ACS880-07-1320A-5	2xD8T+2xR8i
1580	2060	1100	1517	1000	1182	800	74	27000	5720	ACS880-07-1580A-5	2xD8T+2xR8i
1980	2574	1400	1901	1300	1481	1000	75	36000	7150	ACS880-07-1980A-5	2xD8T+3xR8i

12-pulse diode

990	1287	710	950	630	741	500	73	16000	5720	ACS880-07-0990A-5+A004	2xD7T+2xR8i
1320	1716	900	1267	900	987	710	74	22000	5720	ACS880-07-1320A-5+A004	2xD8T+2xR8i
1580	2060	1100	1517	1000	1182	800	74	27000	5720	ACS880-07-1580A-5+A004	2xD8T+2xR8i
1980	2574	1400	1901	1300	1481	1000	75	36000	7150	ACS880-07-1980A-5+A004	2xD8T+3xR8i

¹⁾ 130% overload

²⁾ 125% overload

Ratings, types and voltages

Cabinet-built drives, ACS880-07

$U_N = 690$ V (range 525 to 690 V). The power ratings are valid at nominal voltage 690 V (45 to 2800 kW).

Nominal ratings			Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
I_N A	I_{max} A	P_N kW	I_{Ld} A	P_{Ld} kW	I_{Hd} A	P_{Hd} kW	dBA	W	m ³ /h		

6-pulse diode

61	104	55	58	55	49	45	67	1795	1750	ACS880-07-0061A-7	R6
84	124	75	80	75	61	55	67	1940	1750	ACS880-07-0084A-7	R6
98	168	90	93	90	84	75	67	2440	1750	ACS880-07-0098A-7	R7
119	198	110	113	110	98	90	67	2810	1750	ACS880-07-0119A-7	R7
142	250	132	135	132	119	110	65	3800	1750	ACS880-07-0142A-7	R8
174	274	160	165	160	142	132	65	4400	1750	ACS880-07-0174A-7	R8
210	384	200	200	200	174	160	68	4700	1150	ACS880-07-0210A-7	R9
271	411	250	257	250	210	200	68	5300	1150	ACS880-07-0271A-7	R9
330	480	315	320	315	255	250	72	4903	2950	ACS880-07-0330A-7	R10
370	520	355	360	355	325	315	72	6102	2950	ACS880-07-0370A-7	R10
425	520	400	415	400	360	355	72	6909	2950	ACS880-07-0425A-7	R11
470	655	450	455	450	415	400	72	8622	2950	ACS880-07-0470A-7	R11
522	655	500	505	500	455	450	72	9264	2950	ACS880-07-0522A-7	R11
590	800	560	571	560	505	500	71	10362	2950	ACS880-07-0590A-7	R11
650	820	630	630	630	571	560	71	11078	3170	ACS880-07-0650A-7	R11
800	1200	800	768	710	598	560	73	16000	4290	ACS880-07-0800A-7	1xD8T+2xR8i
1160	1740	1100	1114	1100	868	800	74	26000	5720	ACS880-07-1160A-7	2xD8T+2xR8i
1650	2475	1600	1584	1500	1234	1200	75	36500	7150	ACS880-07-1650A-7	2xD8T+3xR8i
2300	3450	2200	2208	2000	1720	1600	76	52000	10010	ACS880-07-2300A-7	3xD8T+4xR8i
2860	4290	2800	2746	2400	2139	2000	78	65000	12870	ACS880-07-2860A-7	4xD8T+5xR8i

12-pulse diode

800	1200	800	768	710	598	560	73	16000	5720	ACS880-07-0800A-7+A004	2xD7T+2xR8i
1160	1740	1100	1114	1100	868	800	74	26000	5720	ACS880-07-1160A-7+A004	2xD8T+2xR8i
1650	2475	1600	1584	1500	1234	1200	75	36500	7150	ACS880-07-1650A-7+A004	2xD8T+3xR8i
2300	3450	2200	2208	2000	1720	1600	77	52000	11440	ACS880-07-2300A-7+A004	4xD8T+4xR8i
2860	4290	2800	2746	2400	2139	2000	78	65000	12870	ACS880-07-2860A-7+A004	4xD8T+5xR8i

Frame size	Height IP22/42 (mm)	Height IP54 (mm)	Width (mm)	Depth (mm)	Weight (kg)
R6	2145	2315	430 ³⁾	673	240
R7	2145	2315	430 ³⁾	673	250
R8	2145	2315	430 ³⁾	673	265
R9	2145	2315	830	698	375
R10	2145	2315	830 ³⁾⁴⁾	698	530
R11	2145	2315	830 ³⁾⁴⁾	698	580

³⁾ Additional 200 mm if equipped with 1st environment (C2) filter

⁴⁾ Additional 300 mm if equipped with braking chopper

Frame size	Height IP22/42 (mm)	Height IP54 (mm)	6-pulse width (mm) ⁹⁾	12-pulse width (mm) ⁹⁾	Depth (mm) ¹⁰⁾	Depth top exit (mm)	6-pulse weight (kg)	12-pulse weight (kg)
1xD8T+2xR8i	2145	2315	1830	–	698	898	1100	–
2xD7T+2xR8i	2145	2315	–	2030 ⁶⁾⁸⁾	698	898	–	1200
2xD8T+2xR8i ⁵⁾	2145	2315	2030 ⁸⁾	–	698	898	1350	–
2xD8T+2xR8i	2145	2315	2230 ⁸⁾	2230 ⁶⁾⁸⁾	698	898	1400	1500
2xD8T+3xR8i	2145	2315	2430 ⁸⁾	2430 ⁶⁾⁸⁾	698	898	1550	1650
3xD8T+3xR8i	2145	2315	2630 ⁸⁾	–	698	898	1800	–
3xD8T+4xR8i	2145	2315	3030 ⁸⁾	–	698	898	2100	–
4xD8T+3xR8i	2145	2315	–	3030 ⁷⁾⁸⁾	698	898	–	2400
4xD8T+4xR8i	2145	2315	–	3430 ⁷⁾⁸⁾	698	898	–	2600
4xD8T+5xR8i	2145	2315	3630 ⁸⁾	3630 ⁷⁾⁸⁾	698	898	2600	2800

⁵⁾ ACS880-07-1160A-7

⁶⁾ Additional 200 mm if equipped with earthing switch

⁷⁾ Additional 600 mm if equipped with line contactor, earthing switch or air circuit breaker

⁸⁾ Additional 200 mm if Top entry

⁹⁾ If UL variant the width may differ

¹⁰⁾ Top exit with backpack for n x R8i, additional depth is 200 mm

Nominal ratings

I_N	Rated current available continuously without overloadability at 40 °C.
P_N	Typical motor power in no-overload use.
I_{max}	Maximum output current. Available for 10 seconds at start, then as long as allowed by drive temperature.

Light-overload use

I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 min/5 min at 40 °C.
P_{Ld}	Typical motor power in light-overload use.

Heavy-duty use

I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 min/5 min at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply at 40 °C ambient temperature. At higher temperatures (up to 50 °C) the derating is 1%/1 °C.

Operation above 150 Hz might require type specific derating.

Standard interface and extensions for comprehensive connectivity

The ACS880 single drives offers a wide range of standard interfaces. In addition the drive has three option slots that can be used for extensions including fieldbus adapter modules,

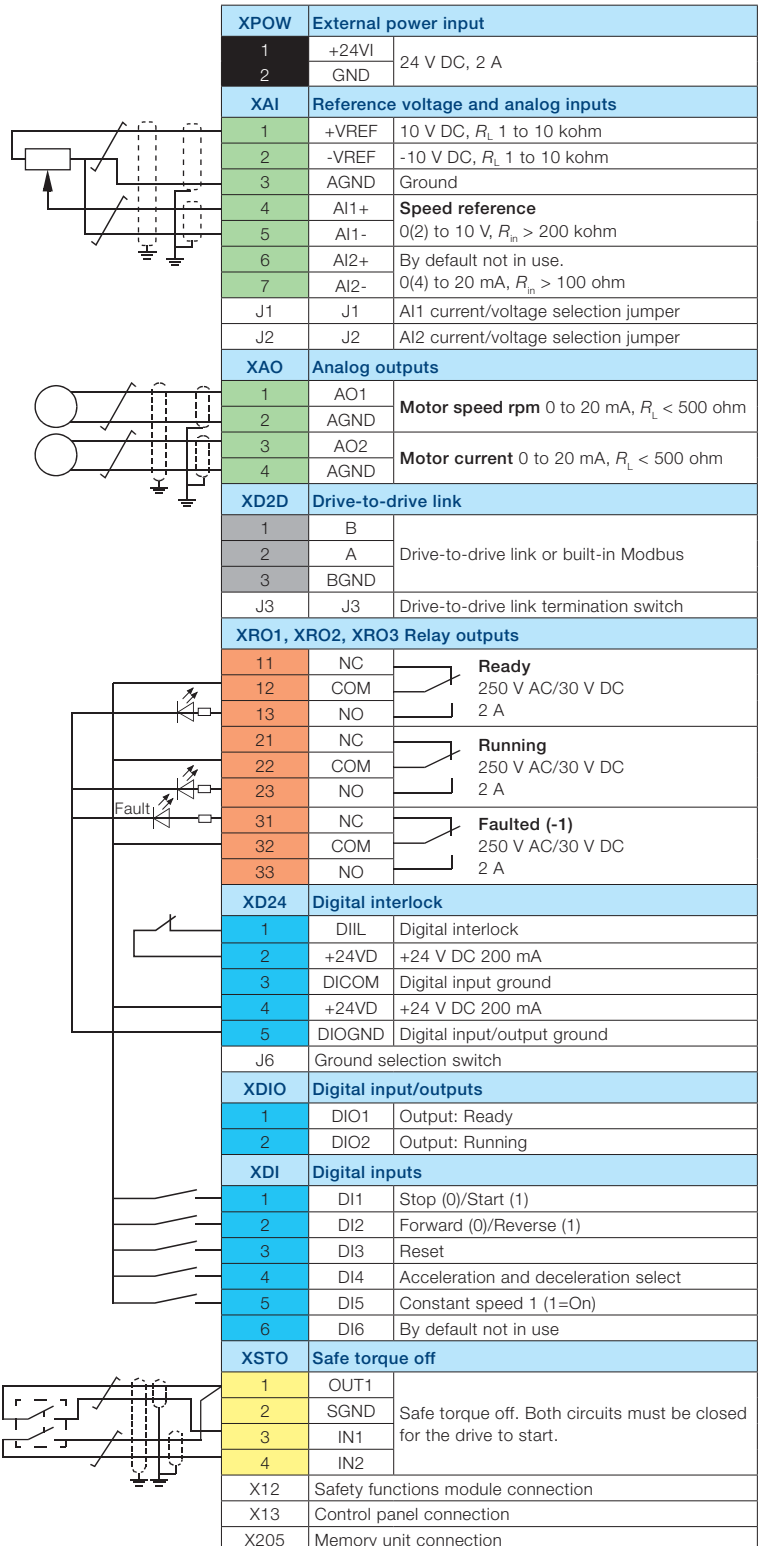
input/output extension modules, feedback modules and a safety functions module.

Control connections	Description
2 analog inputs (XAI)	Current input: -20 to 20 mA, R_{in} : 100 ohm Voltage input: -10 to 10 V, R_{in} > 200 kohm Resolution: 11 bit + sign bit
2 analog outputs (XAO)	0 to 20 mA, R_{load} < 500 ohm Frequency range: 0 to 300 Hz Resolution: 11 bit + sign bit
6 digital inputs (XDI)	Input type: NPN/PNP (DI1 to DI5), NPN (DI6) DI6 (XDI:6) can alternatively be used as an input for a PTC thermistor.
Digital input interlock (DIIL)	Input type: NPN/PNP
2 digital inputs/outputs (XDIO)	As input: 24 V logic levels: "0" < 5 V, "1" > 15 V R_{in} : 2.0 kohm Filtering: 0.25 ms As output: Total output current from 24 V DC is limited to 200 mA Can be set as pulse train input and output
3 relay outputs (XRO1, XRO2, XRO3)	250 V AC/30 V DC, 2 A
Safe torque off (XSTO)	For the drive to start, both connections must be closed
Drive-to-drive link (XD2D)	Physical layer: EIA-485
Built-in Modbus	EIA-485
Assistant control panel/ PC tool connection	Connector: RJ-45



Control unit ZCU

Example of a typical single drives input/output connection diagram. Variations maybe possible (please see HW manual for more information).



Standard software for scalable control and functionality

The same software, the primary control program, is used across the whole ACS880 series. Features such as built-in pre-programmed application macros save time during configuration and drive commissioning. The application macros help set parameters for various functions including:

- Basic setup for input/output control and fieldbus control
- Hand/auto control for local and remote operation
- PID control for closed loop processes
- Sequential control for repetitive cycles
- Torque control
- Four user sets, for saving multiple drive configurations

Direct torque control (DTC)

The drives are equipped with direct torque control (DTC), ABB's signature motor control platform which supports motors such as induction motors, permanent magnet synchronous motors and servo motors and the new synchronous reluctance motor. DTC helps control the motor from standstill to maximum torque and speed without the necessity of encoders or position sensors. DTC allows high overloadability, gives high starting torque and reduces stress on mechanics.

Energy efficiency information

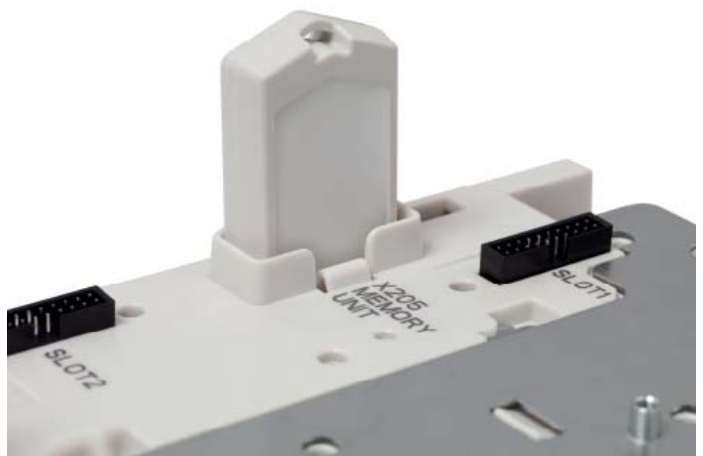
The drives come with built-in energy efficiency information that helps the user fine-tune processes to ensure optimum energy use. The energy optimizer mode ensures the maximum torque per ampere, reducing energy drawn from the supply. The load profile feature collects drive values with three loggers: two amplitude loggers and one peak value logger. Calculators provide essential energy efficiency information: used and saved electrical energy, CO₂ reduction and money saved.

Additional software features include:

- Access levels
- Adaptive programming
- Automatic reset
- Automatic start
- Constant speeds
- Critical speeds and frequencies
- DC hold
- DC magnetizing
- Diagnostics
- Drive-to-drive link for master-follower control
- Flux braking
- Jogging
- Maintenance timer and counters
- Mechanical brake control
- Motor potentiometer
- Output phase order selection, switches rotation direction of the motor
- Oscillation damping
- Power loss ride-through
- Process PID control with trim function
- Programmable and pre-programmed protection functions
- Programmable inputs and outputs
- Scalar control with IR compensation
- Speed controller with auto tuning
- Startup assistants
- User adjustable load supervision/limitation
- User selectable acceleration and deceleration ramps
- Variable slope

Removable memory unit

The removable memory unit stores the software that includes user settings, parameter settings and motor data. Situated on the control unit, the memory unit can easily be removed for maintenance, update or replacement purposes. This common type of memory unit is used throughout the ACS880 series.



Application control programs



Our application control programs are developed by working closely with our customers over many years. This results in application programs that include the lessons learned across many customers, and that are designed to give you the flexibility to adapt the programs to your specific needs. These programs enhance application usability and lower energy consumption. They increase safe operation of the applications and reduce the need for a PLC. Other benefits include protection of machinery and optimization of application productivity. The programs also optimize time usage and lower operational costs.

The ACS880 application control programs come with adaptive programming features. This makes fine tuning of the functionality of the ready-made application control programs easy. Additionally, we understand that you may need to use different configurations in your process. That's why each of our control programs comes with the ability to configure up to four different configurations, or "user sets." The ACS880 drives offer integrated safety with safe torque off (STO) functionality as standard. The optional safety functions module, FSO-11, comes with five safety functions including safe brake control (SBC).

Control programs for cranes

This control program is dedicated for industrial, harbor, tower and marine deck cranes. It is possible to control crane movements in hoist and trolley and travel motions using the same software. The control program comes with integrated mechanical brake control to assure safe opening and closing of the mechanical disc or drum brakes. Standalone and master-follower functionality is supported along with synchro control of multimotors. The synchro control for common operation of the load functionality makes it possible to lift and lower loads, such as containers, in a smooth and balanced way during transportation. The load speed control function maximizes the hoist speed for the given load and ensures that there is sufficient motor torque in the field weakening area.

This minimizes operation time and optimizes crane capacity. Fieldbus and conventional I/O control is supported.

Control program for winder

This control program makes sure that unwinding and winding of a roll of web material, such as textile, plastic and paper is performed optimally. The control program observes the diameter of rolls and tension of the web material and makes sure that the drives controlling different parts of the winder are in sync. Based on the feedback from the dancer or tension measurement of the web, the speed or torque of the drive is adjusted properly. The result is a straightforward, cost-effective solution in web handling. Another feature is the mechanics ID run function that calculates automatically the inertia and friction of the roll. This speeds up the commissioning of the drive.

Control program for artificial oil lifting

This control program increases oil production for PCP (progressive cavity pumps), ESP (electro submersible pumps) or rod pumps. The program does not require any feedback encoder to work, which saves costs and increases reliability. The software also reduces stress on the complete pump system when optimizing fluid production. Backspin functionality is especially suitable for PCP and ESP pumps, which minimizes failure and makes oil pumping safe. Various startup ramp functions are also available. The sensorless control function (pump off control) helps to optimize oil pumping productivity by keeping the energy usage on a predetermined level.

Control program for centrifuge/decanter

This control program is designed to perform practical programmable sequences for conventional centrifuges. The program optimizes the separation of solids from the liquids in centrifuges, separators or decanter centrifuges. The speed difference of the bowl and scrolling in the decanter centrifuge is controlled by the drive-to-drive functionality available in ACS880 drives.

Intuitive human-machine interface

The assistant control panel features intuitive use and easy navigation. High resolution display enables visual guidance. The panel saves on commissioning and learning time by means of different assistants, making the drive simple to set up and use.

It is possible to organize parameters in different ways and store essential parameters for different configurations for any specialized application needed. The menus and messages can be customized for specific terminology so that each application can be set up and configured to its optimum performance. This makes the drive easier to use with information that is familiar to users. With the panel's text editor, users can also add information, customize text and label the drive. Powerful backup and restore functions

are supported as well as different language versions. The help key provides context sensitive guidance. Faults or warnings can be resolved quickly since the help key provides troubleshooting instructions.

One control panel can be connected to several drives simultaneously using the panel network feature. The user can also select the drive to operate in the panel network. The PC tool can be easily connected to the drive through the USB connector on the control panel. There is also the assistant control panel mounting platform, DPMP-01 IP55 kit available for cabinet door flush mounting.



PC tool for easy startup and maintenance

The Drive composer PC tool offers fast and harmonized setup, commissioning and monitoring for the whole 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 safety settings.

The Drive composer tool is connected to the drive using an Ethernet connection or through the 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 minimizes operational and maintenance costs.

Drive composer pro

Drive composer pro provides basic functionality, including parameter settings, downloading and uploading files and search parameters. Advanced features such as graphical control diagrams and various displays are also available. 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 a PC tool network. Full backup and restore functions are also included. Safety settings can be configured with Drive composer pro.



Integrated safety simplifies configuration

Integrated safety reduces the need for external safety components, simplifying configuration and reducing installation space. The safety functionality is a built-in feature of the ACS880, with safe torque off (STO) as standard. Additional safety functions can be commissioned with the optional and compact safety functions module that includes safe stop 1 (SS1), safe stop emergency (SSE), safely-limited speed (SLS), safe brake control (SBC) and safe maximum speed (SMS). The drives' functional safety is designed according to EN/IEC 61800-5-2 and complies with the requirements of the European Union Machinery Directive 2006/42/EC.

Safe torque off as standard

Safe torque off (STO) is used to prevent unexpected startup and in stopping-related functions, enabling safe machine maintenance and operation. With safe torque off activated, the drive will not provide a rotational field. This prevents the motor from generating torque on the shaft. This function corresponds to an uncontrolled stop in accordance with stop category 0 of EN 60204-1.

The safety functions module

The easy to connect and configure safety functions module FSO-11 comes with a range of safety functions and a self-diagnostic function that meets current safety requirements and standards, in one compact module. Compared to using external safety components, the FSO-11 comes with the supported functions seamlessly integrated with the drive functionality, reducing the implementation of safety function connections and configuration. Installing FSO-11 results in less needs for cabling and provides a cost-effective solution packed into a single safety functions module to ensure safe operation. Commissioning and configuration of the safety functions is done with the Drive composer pro PC tool. The drive and FSO-11 are easy to connect to a safety PLC using PROFIsafe over profinet fieldbus adapter module (FENA-11).

The safety functions module supports the following safety functions (which achieve up to SIL 3 or PL e safety level (Cat. 3)):

FSO-11 can be also ordered as spare part kit. The kit includes most common assembly accessories for ACS880 drives.

- **Safe stop 1 (SS1)** brings the machine to a stop (STO) using a monitored deceleration ramp. It is typically used in applications where the machinery motion needs to be brought to a stop (stop category 1) in a controlled way before switching over to the no-torque state.
- **Safe stop emergency (SSE)** can be configured to, upon request, either activate STO instantly (category 0 stop), or first initiate motor deceleration and then, once the motor has stopped, activate the STO (category 1 stop).
- **Safe brake control (SBC)** provides a safe output for controlling the motor's external (mechanical) brakes, together with STO.
- **Safely-limited speed (SLS)** ensures that the specified speed limit of the motor is not exceeded. This allows machine interaction to be performed at slow speed without stopping the drive. FSO-11 comes with four individual SLS settings for speed monitoring.
- **Safe maximum speed (SMS)** monitors that the speed of the motor does not exceed the configured speed limit.

Safety functions module

Option	Ordering code
FSO-11	+Q973



ACS880 drive with FSO-11



Safety functions module, FSO-11



ACS880 cabinet-built drive with FSO-11

Drive application programming with CODESYS

Automation Builder, ABB's new software suite for automation engineering, makes programming of industry devices such as drives, PLC's, robots and human machine interfaces (HMI) easy using one Integrated engineering suite. The Automation Builder is used both for engineering individual industry devices and for putting together entire automation projects. It is based on CODESYS, a widely used software environment that fulfills many different requirements of industrial automation projects, according to the IEC standard 61131-3. As a single tool, the Automation Builder reduces time typically needed for system configuration and programming. It also reduces the need for installing and maintaining separate programs simultaneously. Automation Builder enables the possibility to do online diagnostic checking of multiple tasks performed by different industrial devices such as ACS880 drives.

Drive application programming

Automation Builder makes it possible for system integrators and machine builders to integrate their desired functionality and know-how directly into ACS880 drives. This is possible as ACS880 drives come with CODESYS programming capability embedded inside the drive. Designing a CODESYS-based application program in the drive makes the end user application run more efficiently, even without a separate programmable controller. It also brings higher end-product quality and requires less need for installation space and wiring.

Automation Builder lets you extend the standard functionality of parameter functions for ACS880 drives. This makes the ACS880 drives very flexible to meet exact requirements set for end user applications. The library management functionality in Automation Builder shortens engineering time as reuse of existing program code is possible. Additional features include the ability to select and use one of five different programming languages, effective program debugging and user password protection.

Integrated engineering suite for operating several industry components together

Using the Drive manager tool embedded in Automation Builder together with ABB's AC500 PLC gives the user online connection to all drives in a fieldbus network. This speeds up commissioning and makes diagnostic of the entire automation system easy. Automation Builder saves all the configuration data of industry devices (including drive parameter settings) and program code to the same project archive. This makes engineering work more consistent and manageable.

The drive application programming license should be ordered together with the drive.

Drive application programmability

Option	Option code
License key ¹⁾	+N8010

¹⁾ The Automation Builder tools must be ordered separately. For further information please contact your local ABB



Automation Builder

One engineering tool to control all industry devices
 System configuration and diagnostic
 IEC programming
 Common project data handling

Flexible connectivity to automation networks

Our fieldbus adapter modules enable communication between drives, systems, devices and software. Our industrial drives are compatible with a wide range of fieldbus protocols.

The plug-in fieldbus adapter module can easily be mounted inside the drive. Other benefits include reduced wiring costs when compared with traditional input/output connections. Fieldbus systems are also less complex than conventional systems, resulting in less overall maintenance.

Multiple fieldbus connections for flexible control

ACS880 supports two fieldbus connections simultaneously. The user has flexibility of choice for control modes by being able to select one protocol for control and one for monitoring.

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.

Drive parameter handling

The Ethernet fieldbus adapter module allows users to build an Ethernet network for drive monitoring and diagnostic and parameter handling purposes.

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 pre-commissioning of single machine sections and provides easy and fast assembly of the complete installation.

Universal communication with ABB fieldbus adapters

The ACS880 supports the following fieldbus protocols:

Fieldbus adapter modules

Option	Option code	Fieldbus protocol
FPBA-01	+K454	PROFIBUS DP, DPV0/DPV1
FCAN-01	+K457	CANopen®
FDNA-01	+K451	DeviceNet™
FENA-11	+K473	1 port EtherNet/IP™, Modbus TCP, PROFINET IO, PROFIsafe ¹⁾
FENA-21	+K475	2 port EtherNet/IP™, Modbus TCP, PROFINET IO, PROFIsafe ¹⁾
FECA-01	+K469	EtherCAT®
FSCA-01	+K458	Modbus RTU
FEPL-02	+K470	PowerLink
FCNA-01	+K462	ControlNet™

¹⁾ For the PROFIsafe to work PROFINET fieldbus adapter module (FENA-11/-21) and the safety functions module (FSO-11) are required.



ACS880 drive with fieldbus adapters and feedback interface module



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 control unit.

Analog and digital input/output extension modules

Option	Option code	Connections
FIO-01	+L501	4×DI/O, 2×RO
FIO-11	+L500	3×AI (mA/V), 1×AO (mA), 2×DI/O
FAIO-01	+L525	2×AI(mA/V), 2×AO(mA)

Speed feedback interfaces for precise process control

ACS880 drives can be connected to various feedback devices, such as HTL pulse encoder, TTL pulse encoder, absolute encoder and resolver. The optional feedback module is installed in the option slot on the drive. It is possible to use two feedback modules at the same time, either of the same type or different type.

Feedback interface modules

Option	Option code	Connections
FEN-01	+L517	2 inputs (TTL pulse encoder), 1 output
FEN-11	+L518	2 inputs (SinCos absolute, TTL pulse encoder), 1 output
FEN-21	+L516	2 inputs (Resolver, TTL pulse encoder), 1 output
FEN-31	+L502	1 input (HTL pulse encoder), 1 output

I/O option extension adapter

For additional I/O option slots the FEA-03 is suitable for this use. An analog and digital input/output extension and speed feedback interface can be installed on the FEA-03. Two extension modules can be installed on each I/O extension slot. The connection to the control unit is via an fiber optic link and the adapter can be mounted on an DIN rail (35 x 7.5 mm).

I/O extension adapter

Option	Option code	Connections
FEA-03 ¹⁾	+L515	2×F-type option extension slots

¹⁾ Please check availability from your local ABB.

DDCS communication option modules

The FDCO-0X optical DDCS communication options are add-on modules on the ACS880 industrial drives control board. The modules include connectors for two fiber optic DDCS channels. The FDCO-0X modules make it possible to perform master-follower and AC800 M communication.

Option	Option code	Connections
FDCO-01	+L503	Optical DDCS (10 Mbd/10 Mbd)
FDCO-02	+L508	Optical DDCS (5 Mbd/10 Mbd)

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. Being compatible with standard web browsers, it ensures easy access to a web-based user interface. Through the interface the user can configure drive parameters, monitor drive log data, and follow up load levels, run time, energy consumption, I/O data and bearing temperature of the motor connected to the drive.

The user can access the remote monitoring tool web page using 3G modem from anywhere with a standard PC, tablet or a mobile phone. The remote monitoring tool helps to reduce cost when personnel are able to monitor or perform maintenance for unmanned or manned applications in a range of industries. It is also very useful when more than one user wants to access the drive from several locations.

Enhanced monitoring functions

The remote monitoring tool supports process and drive data logging. Values of process variables or drives actual

values can be logged to NETA-21's SD memory card which is situated in the remote monitoring tool or sent forward to a centralized database. NETA-21 does not need an external database as the remote monitoring tool is able to store valuable data of the drive during its entire lifetime.

Unmanned monitoring of processes or devices is ensured by the built-in alarm functions that notify maintenance personnel if a safety level is reached. Alarm history with true time stamps are stored internally to the memory card as well as technical data, which is provided by the drive for troubleshooting purposes. True time stamps are also used with drives that do not have a real time clock as standard for ensuring events of all connected drives.



NETA-21

EMC – electromagnetic compatibility

Each ACS880 model can be equipped with a built-in filter to reduce high frequency emissions.

EMC standards

The EMC product standard (EN 61800-3 (2004)) 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.

1st environment versus 2nd environment

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 other than those directly connected to a low voltage power supply network that supplies buildings used for domestic purposes.

EMC standards

EMC according to EN 61800-3 (2004) 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
1 st environment, unrestricted distribution	Category C1	Group 1, Class B	Not applicable	Applicable
1 st environment, restricted distribution	Category C2	Group 1, Class A	Applicable	Not applicable
2 nd environment, unrestricted distribution	Category C3	Group 2, Class A	Not applicable	Not applicable
2 nd environment, restricted distribution	Category C4	Not applicable	Not applicable	Not applicable

Selecting an EMC filter

The following table gives the correct filter selection.

Type	Voltage	Frame sizes	1 st environment, restricted distribution, C2, grounded network (TN) Option code	2 nd environment, C3, grounded network (TN) Option code	2 nd environment, C3, ungrounded network (IT) Option code	2 nd environment, C3, grounded/ungrounded network (TN/IT) Option code
ACS880-01	380 to 500 V	R1 to R9	+E202	+E200	+E201 (R6 to R9 frame size)	–
ACS880-01	690 V	R5 to R9	–	+E200 (R5 to R9 frame size)	+E201 (R7 to R9 frame size)	–
ACS880-07	380 to 690 V	R6 to R11	+E202 (not for 690 V)	+E200	+E201	+E210 (R10 to R11)
ACS880-07	380 to 690 V	n×R8i	+E202 (not for 690 V only for 0990A, 1070A and 1140A)	–	–	As standard

Brake options

Brake chopper

The brake chopper is built-in as standard for the ACS880-01 frame sizes R1 to R4. For other frames, a brake chopper is a selectable internal option. Braking control is integrated into the ACS880 single 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 overtemperature.

Brake resistor

The brake resistors are separately available for ACS880-01 and built in for the cabinet-built ACS880-07. Resistors other than the standard option resistors may be used, provided that the specified resistance value is not decreased and that the heat

dissipation capacity of the resistor is sufficient for the drive application. 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.



Brake resistor, SACE15RE13

Brake options, ACS880-01

$U_N = 230\text{ V}$ (range 208 to 240 V)							
Braking power		Brake resistor(s)				Type designation	Frame size
P_{brcont} [kW]	R_{min} ohm	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]		
0.75	65	JBR-03	80	40	0.14	ACS880-01-04A6-2	R1
1.1	65	JBR-03	80	40	0.14	ACS880-01-06A6-2	R1
1.5	65	JBR-03	80	40	0.14	ACS880-01-07A5-2	R1
2.2	65	JBR-03	80	40	0.14	ACS880-01-10A6-2	R1
4	18	SACE15RE22	22	420	2	ACS880-01-16A8-2	R2
5.5	18	SACE15RE22	22	420	2	ACS880-01-24A3-2	R2
7.5	13	SACE15RE13	13	435	2	ACS880-01-031A-2	R3
11	12	SACE15RE13	13	435	2	ACS880-01-046A-2	R4
11	12	SACE15RE13	13	435	2	ACS880-01-061A-2	R4
18.5	6	SAFUR90F575	8	1800	4.5	ACS880-01-075A-2+D150	R5
22	6	SAFUR90F575	8	1800	4.5	ACS880-01-087A-2+D150	R5
30	3.5	SAFUR125F500	4	3600	9	ACS880-01-115A-2+D150	R6
37	3.5	SAFUR125F500	4	3600	9	ACS880-01-145A-2+D150	R6
45	2.4	SAFUR200F500	2.7	5400	13.5	ACS880-01-170A-2+D150	R7
55	2.4	SAFUR200F500	2.7	5400	13.5	ACS880-01-206A-2+D150	R7
75	1.8	SAFUR200F500	2.7	5400	13.5	ACS880-01-274A-2+D150	R8

$U_N = 400\text{ V}$ (range 380 to 415 V)							
Braking power		Brake resistor(s)				Type designation	Frame size
P_{brcont} [kW]	R_{min} ohm	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]		
0.75	78	JBR-03	80	40	0.14	ACS880-01-02A4-3	R1
1.1	78	JBR-03	80	40	0.14	ACS880-01-03A3-3	R1
1.5	78	JBR-03	80	40	0.14	ACS880-01-04A0-3	R1
2.2	78	JBR-03	80	40	0.14	ACS880-01-05A6-3	R1
3	78	JBR-03	80	40	0.14	ACS880-01-07A2-3	R1
4	78	JBR-03	80	40	0.14	ACS880-01-09A4-3	R1
5.5	78	JBR-03	80	40	0.14	ACS880-01-12A6-3	R1
7.5	39	SACE08RE44	44	210	1	ACS880-01-017A-3	R2
11	39	SACE08RE44	44	210	1	ACS880-01-025A-3	R2
15	19	SACE15RE22	22	420	2	ACS880-01-032A-3	R3
18.5	19	SACE15RE22	22	420	2	ACS880-01-038A-3	R3
22	13	SACE15RE13	13	435	2	ACS880-01-045A-3	R4
22	13	SACE15RE13	13	435	2	ACS880-01-061A-3	R4
37	8	SAFUR90F575	8	1800	4.5	ACS880-01-072A-3+D150	R5
45	8	SAFUR90F575	8	1800	4.5	ACS880-01-087A-3+D150	R5
55	5.4	SAFUR80F500	6	2400	6	ACS880-01-105A-3+D150	R6
75	5.4	SAFUR80F500	6	2400	6	ACS880-01-145A-3+D150	R6
90	3.3	SAFUR125F500	4	3600	9	ACS880-01-169A-3+D150	R7
110	3.3	SAFUR125F500	4	3600	9	ACS880-01-206A-3+D150	R7
132	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-01-246A-3+D150	R8
132	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-01-293A-3+D150	R8
160	2	SAFUR200F500	2.7	5400	13.5	ACS880-01-363A-3+D150	R9
160	2	SAFUR200F500	2.7	5400	13.5	ACS880-01-430A-3+D150	R9

All brake resistors are to be installed outside the converter module.
 The SACE brake resistors are built-in to an IP21 metal housing.
 The SAFUR brake resistors are built-in to an IP00 metal frame.

Brake options, ACS880-01

$U_N = 500 \text{ V}$ (range 380 to 500 V)							
Braking power		Brake resistor(s)				Type designation	Frame size
P_{brcont} [kW]	R_{min} ohm	Type	R [Ohm]	E_r [kJ]	P_{rccont} [kW]		
0.75	78	JBR-03	80	40	0.14	ACS880-01-02A1-5	R1
1.1	78	JBR-03	80	40	0.14	ACS880-01-03A0-5	R1
1.5	78	JBR-03	80	40	0.14	ACS880-01-03A4-5	R1
2.2	78	JBR-03	80	40	0.14	ACS880-01-04A8-5	R1
3	78	JBR-03	80	40	0.14	ACS880-01-05A2-5	R1
4	78	JBR-03	80	40	0.14	ACS880-01-07A6-5	R1
5.5	78	JBR-03	80	40	0.14	ACS880-01-11A0-5	R1
7.5	39	SACE08RE44	44	210	1	ACS880-01-014A-5	R2
11	39	SACE08RE44	44	210	1	ACS880-01-021A-5	R2
15	19	SACE15RE22	22	420	2	ACS880-01-027A-5	R3
18.5	19	SACE15RE22	22	420	2	ACS880-01-034A-5	R3
22	13	SACE15RE13	13	435	2	ACS880-01-040A-5	R4
22	13	SACE15RE13	13	435	2	ACS880-01-052A-5	R4
37	8	SAFUR90F575	8	1800	4.5	ACS880-01-065A-5+D150	R5
45	8	SAFUR90F575	8	1800	4.5	ACS880-01-077A-5+D150	R5
55	5.4	SAFUR80F500	6	2400	6	ACS880-01-096A-5+D150	R6
75	5.4	SAFUR80F500	6	2400	6	ACS880-01-124A-5+D150	R6
90	3.3	SAFUR125F500	4	3600	9	ACS880-01-156A-5+D150	R7
110	3.3	SAFUR125F500	4	3600	9	ACS880-01-180A-5+D150	R7
132	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-01-240A-5+D150	R8
132	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-01-260A-5+D150	R8
160	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-01-361A-5+D150	R9
160	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-01-414A-5+D150	R9

$U_N = 690 \text{ V}$ (range 525 to 690 V)							
Braking power		Brake resistor(s)				Type designation	Frame size
P_{brcont} [kW]	R_{min} ohm	Type	R [Ohm]	E_r [kJ]	P_{rccont} [kW]		
6	18	SACE08RE44	44	210	1	ACS880-01-07A3-7+D150	R5
8	18	SACE08RE44	44	210	1	ACS880-01-09A8-7+D150	R5
11	18	SACE08RE44	44	210	1	ACS880-01-14A2-7+D150	R5
17	18	SACE15RE22	22	420	2	ACS880-01-018A-7+D150	R5
23	18	SACE15RE22	22	420	2	ACS880-01-022A-7+D150	R5
28	18	SACE15RE22	22	420	2	ACS880-01-026A-7+D150	R5
33	18	SACE15RE22	22	420	2	ACS880-01-035A-7+D150	R5
45	18	SACE15RE22	22	420	2	ACS880-01-042A-7+D150	R5
45	18	SACE15RE22	22	420	2	ACS880-01-049A-7+D150	R5
55	13	SACE15RE13	13	435	2	ACS880-01-061A-7+D150	R6
65	13	SACE15RE13	13	435	2	ACS880-01-084A-7+D150	R6
90	8	SAFUR90F575	8	1800	4.5	ACS880-01-098A-7+D150	R7
110	8	SAFUR90F575	8	1800	4.5	ACS880-01-119A-7+D150	R7
132	6	SAFUR80F500	6	2400	6	ACS880-01-142A-7+D150	R8
160	6	SAFUR80F500	6	2400	6	ACS880-01-174A-7+D150	R8
200	4	SAFUR125F500	4	3600	9	ACS880-01-210A-7+D150	R9
250	4	SAFUR125F500	4	3600	9	ACS880-01-271A-7+D150	R9

All brake resistors are to be installed outside the converter module.
 The SACE brake resistors are built-in to an IP21 metal housing.
 The SAFUR brake resistors are built-in to an IP00 metal frame.

Maximum braking power of the ACS880 equipped with the standard chopper and the standard resistor

P_{brcont}	Continuous brake chopper power. The value applies to the minimum resistance value. With a higher resistance value the P_{brcont} may increase in some ACS880 units.
R	Resistance value for the listed resistor type.
R_{min}	Minimum allowable resistance value for the brake resistor.
E_r	Energy pulse that the resistor assembly will withstand (400 s duty cycle). This energy will heat the resistor element from 40 °C to the maximum allowable temperature.
P_{rccont}	Continuous power (heat) dissipation of the resistor when placed correctly. Energy E_r dissipates in 400 seconds.

Brake resistor	Width (mm)	Depth (mm)	Weight (kg)
JBR-03	340	77	0.8
SACE08RE44	290	131	6.1
SACE15RE22	290	131	6.1
SACE15RE13	290	131	6.8
SAFUR80F500	300	345	14
SAFUR90F575	300	345	12
SAFUR125F500	300	345	25
SAFUR200F500	300	345	30

Brake options, ACS880-07

$U_N = 400\text{ V}$ (range 380 to 415 V)							
Braking power		Brake resistor(s)				Type designation	Frame size
P_{brcont} [kW]	R_{min} ohm	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]		
55	5.4	SAFUR80F500	6	2400	6	ACS880-07-0105A-3+D150 ²⁾	R6
75	5.4	SAFUR80F500	6	2400	6	ACS880-07-0145A-3+D150 ²⁾	R6
90	3.3	SAFUR125F500	4	3600	9	ACS880-07-0169A-3+D150 ²⁾	R7
110	3.3	SAFUR125F500	4	3600	9	ACS880-07-0206A-3+D150 ²⁾	R7
132	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-07-0246A-3+D150 ²⁾	R8
132	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-07-0293A-3+D150 ²⁾	R8
160	2	SAFUR200F500 ¹⁾	2	7200	18	ACS880-07-0363A-3+D150 ²⁾	R9
160	2	SAFUR200F500 ¹⁾	2	7200	18	ACS880-07-0430A-3+D150 ²⁾	R9
250	2	2xSAFUR125F500	2	7200	18000	ACS880-07-0505A-3+D150 ²⁾	R10
315	1.3	2xSAFUR200F500	1.35	10800	27000	ACS880-07-0585A-3+D150 ²⁾	R10
315	1.3	2xSAFUR200F500	1.35	10800	27000	ACS880-07-0650A-3+D150 ²⁾	R10
400	0.7	3xSAFUR200F500	0.90	16200	40000	ACS880-07-0725A-3+D150 ²⁾	R11
400	0.7	3xSAFUR200F500	0.90	16200	40000	ACS880-07-0810A-3+D150 ²⁾	R11
400	0.7	3xSAFUR200F500	0.90	16200	40000	ACS880-07-0880A-3+D150 ²⁾	R11

$U_N = 500\text{ V}$ (range 380 to 500 V)							
Braking power		Brake resistor(s)				Type designation	Frame size
P_{brcont} [kW]	R_{min} ohm	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]		
55	5.4	SAFUR80F500	6	2400	6	ACS880-07-0096A-5+D150 ²⁾	R6
75	5.4	SAFUR80F500	6	2400	6	ACS880-07-0124A-5+D150 ²⁾	R6
90	3.3	SAFUR125F500	4	3600	9	ACS880-07-0156A-5+D150 ²⁾	R7
110	3.3	SAFUR125F500	4	3600	9	ACS880-07-0180A-5+D150 ²⁾	R7
132	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-07-0240A-5+D150 ²⁾	R8
132	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-07-0260A-5+D150 ²⁾	R8
160	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-07-0361A-5+D150 ²⁾	R9
160	2.3	SAFUR200F500	2.7	5400	13.5	ACS880-07-0414A-5+D150 ²⁾	R9
250	2	2xSAFUR125F500	2	7200	18000	ACS880-07-0460A-5+D150 ²⁾	R10
250	2	2xSAFUR125F500	2	7200	18000	ACS880-07-0503A-5+D150 ²⁾	R10
315	1.3	2xSAFUR200F500	1.35	10800	27000	ACS880-07-0583A-5+D150 ²⁾	R10
315	1.3	2xSAFUR200F500	1.35	10800	27000	ACS880-07-0635A-5+D150 ²⁾	R10
400	0.7	3xSAFUR200F500	0.90	16200	40000	ACS880-07-0715A-5+D150 ²⁾	R11
400	0.7	3xSAFUR200F500	0.90	16200	40000	ACS880-07-0805A-5+D150 ²⁾	R11

$U_N = 690\text{ V}$ (range 525 to 690 V)							
Braking power		Brake resistor(s)				Type designation	Frame size
P_{brcont} [kW]	R_{min} ohm	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]		
55	13	SACE15RE13	13	435	2	ACS880-07-061A-7+D150	R6
65	13	SACE15RE13	13	435	2	ACS880-07-084A-7+D150	R6
90	8	SAFUR90F575	8	1800	4.5	ACS880-07-098A-7+D150	R7
110	8	SAFUR90F575	8	1800	4.5	ACS880-07-119A-7+D150	R7
132	6	SAFUR80F500	6	2400	6	ACS880-07-142A-7+D150	R8
160	6	SAFUR80F500	6	2400	6	ACS880-07-174A-7+D150	R8
200	4	SAFUR125F500	4	3600	9	ACS880-07-210A-7+D150	R9
250	4	SAFUR125F500	4	3600	9	ACS880-07-271A-7+D150	R9

Note:

¹⁾ = Connected in parallel

²⁾ = +D151 if resistor is ordered

All brake resistors are to be installed inside the drive cabinet.

Brake options for high power types, contact your local ABB.

Maximum braking power of the ACS880 equipped with the standard chopper and the standard resistor

P_{brcont}	Continuous brake chopper power. The value applies to the minimum resistance value. With a higher resistance value the P_{brcont} may increase in some ACS880 units.
R	Resistance value for the listed resistor type.
R_{min}	Minimum allowable resistance value for the brake resistor.
E_r	Energy pulse that the resistor assembly will withstand (400 s duty cycle). This energy will heat the resistor element from 40 °C to the maximum allowable temperature.
P_{rcont}	Continuous power (heat) dissipation of the resistor when placed correctly. Energy E_r dissipates in 400 seconds.

Brake resistor	Width (mm)	Depth (mm)	Weight (kg)
JBR-03	340	77	0.8
SACE08RE44	290	131	6.1
SACE15RE22	290	131	6.1
SACE15RE13	290	131	6.8
SAFUR80F500	300	345	14
SAFUR90F575	300	345	12
SAFUR125F500	300	345	25
SAFUR200F500	300	345	30

Additional width for ACS880-07

Resistor quantity	Width (mm)
1xSAFUR	400
2xSAFUR	800

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 emission of 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.

If the motor does not fulfil the following requirements, the lifetime of the motor might decrease. Insulated N-end (non-driven end) bearings and/or common mode filters are also required for motor bearing currents with motors bigger than 100 kW. For more information, please see the ACS880 hardware manuals.

Please see below about how to select a filter according to the motor.

Filter selection table for ACS880

Motor type	Nominal AC supply voltage	Requirements for		
		Motor insulation system	ABB du/dt and common mode filters, insulated N-end motor bearings	
			$P_N < 100$ kW and frame size < IEC 315	100 kW $\leq P_N < 350$ kW or IEC 315 \leq frame size < IEC 400
			$P_N < 134$ hp and frame size < NEMA 500	134 hp $\leq P_N < 469$ hp or NEMA 500 \leq frame size \leq NEMA 580
ABB motors				
Random-wound M2__, M3__ and M4__	$U_N \leq 500$ V	Standard	–	+ N
	500 V < $U_N \leq 600$ V	Standard	+ du/dt	+ du/dt + N
		or Reinforced	–	+ N
	600 V < $U_N \leq 690$ V (cable length ≤ 150 m)	Reinforced	+ du/dt	+ du/dt + N
600 V < $U_N \leq 690$ V (cable length > 150 m)	Reinforced	–	+ N	
Form-wound HX__ and AM__	380 V < $U_N \leq 690$ V	Standard	n/a	+ N + CMF
Old ¹⁾ form-wound HX__ and modular	380 V < $U_N \leq 690$ V	Check with the motor manufacturer	+ du/dt with voltages over 500 V + N + CMF	
Random-wound HX__ and AM__ ²⁾	0 V < $U_N \leq 500$ V	Enmelled wire with	+ N + CMF	
	500 V < $U_N \leq 690$ V	fiber glass taping	+ du/dt + N + CMF	
HDP	Consult the motor manufacturer.			

¹⁾ Manufactured before 1.1.1998.

²⁾ For motors manufactured before 1.1.1998, check for additional instructions with the motor manufacturer.

Non-ABB motors

Random-wound and form-wound	$U_N \leq 420$ V	Standard $\hat{U}_{LL} = 1300$ V	–	+ N or CMF
	420 V < $U_N \leq 500$ V	Standard $\hat{U}_{LL} = 1300$ V	+ du/dt	+ du/dt + N or + du/dt + CMF
		or Reinforced: $\hat{U}_{LL} = 1600$ V, 0.2 microsecond rise time	–	+ N or CMF
	500 V < $U_N \leq 600$ V	Reinforced: $\hat{U}_{LL} = 1600$ V	+ du/dt	+ du/dt + N or + du/dt + CMF
		or Reinforced: $\hat{U}_{LL} = 1800$ V	–	+ N or CMF
	600 V < $U_N \leq 690$ V	Reinforced: $\hat{U}_{LL} = 1800$ V	+ du/dt	+ du/dt + N
Reinforced: $\hat{U}_{LL} = 2000$ V, 0.3 microsecond rise time		–	+ N or CMF	

The abbreviations used in the table are defined below

Abbr.	Definition
U_N	Nominal AC line voltage.
\hat{U}_{LL}	Peak line-to-line voltage at motor terminals which the motor insulation must withstand.
P_N	Motor nominal power.
du/dt	du/dt filter at the output of the drive. Available from ABB as an optional add-on kit.
CMF	Common mode filter. Depending on the drive type, CMF is available from ABB as a factory-installed option (+208) or as an optional add-on kit.
N	N-end bearing: insulated motor non-drive end bearing.
n/a	Motors of this power range are not available as standard units. Consult the motor manufacturer.

du/dt filters

External du/dt filters for ACS880-01

ACS880			du/dt filter type (3 filters included in kits marked*)													
			Unprotected (IP00)			Protected to IP22			Protected to IP54							
400 V	500 V	690 V	NOCH0016-60	NOCH0030-60	NOCH0070-60	NOCH0120-60 ³⁾	FOCH0260-70	FOCH0320-50	NOCH0016-62	NOCH0030-62	NOCH0070-62	NOCH0120-62	NOCH0016-65	NOCH0030-65	NOCH0070-65	NOCH0120-65
02A4-3	02A1-5		x						x				x			
03A3-3	03A0-5		x						x				x			
	03A4-5		x						x				x			
04A0-3	04A8-5		x						x				x			
05A6-3	05A2-5		x						x				x			
07A2-3	07A6-5	07A3-7	x						x				x			
09A4-3		09A8-7	x						x				x			
12A6-3	11A0-5		x						x				x			
		14A2-7	x						x				x			
017A-3	014A-5			x					x					x		
		018A-7		x					x					x		
	021A-5	022A-7		x					x					x		
025A-3		026A-7		x					x					x		
032A-3	027A-5				x					x					x	
	034A-5	035A-7			x					x					x	
038A-3	040A-5	042A-7			x					x					x	
045A-3	052A-5	049A-7			x					x					x	
061A-3					x					x					x	
072A-3	065A-5	061A-7				x					x					x
	077A-5					x					x					x
087A-3		084A-7				x					x					x
105A-3	096A-5	098A-7				x					x					x
145A-3	124A-5	119A-7					x									
	156A-5	142A-7					x									
169A-3	180A-5	174A-7					x									
206A-3	240A-5	210A-7					x									
246A-3	260A-5	271A-7					x									
293A-3							x									
363A-3	361A-5							x								
430A-3	414A-5							x								

Applicability

Separate du/dt filters are available for ACS880-01. Unprotected IP00 filters must be placed into an enclosure that provides an adequate degree of protection.

Factory-installed du/dt filters are available for the ACS880-07. They are installed inside the drive cabinet.

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
NOCH0260-60 ³⁾	383	185	111	12
FOCH0260-70	382	340	254	47
FOCH0320-50	662	319	293	65
FOCH0610-70	662	319	293	65

³⁾ 3 filters included, dimensions apply for one filter.



NOCH0016-62



NOCH0016-60



NOCH0016-65



FOCH0610-70

Dimensioning tool for selecting the optimal drive

DriveSize is designed to help select the optimal drive, motor and transformer for the application. Based on data supplied by the user, the tool calculates and suggests which drive and motors to use. DriveSize uses technical specifications found in our technical catalogs and manuals. It provides default values which can be changed by the user.

DriveSize creates documents for drive and motor dimensioning based on the load, network and cooling data provided by the user. Dimensioning results can be viewed graphically and numerically in the tool.

The tool can be used to calculate currents and network harmonics for a single supply unit or a whole system. The user can import a user-defined motor database by using a separate template that comes with the installation package. DriveSize is easy to use and has shortcut keys to make navigation quicker.

Easy to access and use

DriveSize is a free software and can be used either online or downloaded for PC from www.abb.com/drives.





Summary of features and options

Power and voltage range	Ordering code	ACS880-01	ACS880-07	ACS880-07
		R1 to R9	R6 to R11	n×R8i
		kW	kW	kW
230 V		0.55 to 75		
400 V		0.55 to 250	45 to 500	400 to 1400
500 V		0.55 to 250	45 to 560	500 to 1400
690 V		4 to 250	45 to 630	560 to 2800
Mounting				
Wall-mounting		●	–	–
For cabinet mounting	P940	□	–	–
Cabinet-built		–	●	●
Cabling				
Bottom entry and exit		●	●	●
Top entry and exit		–	□	□
Degree of protection				
IP20 (UL type 1)	P940	□	–	–
IP21 (UL type 1)		●	–	–
IP22 (UL type 1)		–	●	●
IP42 (UL type 1)	B054	–	□	□
IP54 (UL type 12)	B055	–	□	□
IP55 (UL type 12)	B056	□	–	–
Motor control				
DTC motor control		●	●	●
Software				
Primary control program, for more details see section: Drive application programming with CODESYS		●	●	●
Drive application programming with CODESYS using Automation Builder	N8010	□	□	□
Application control program for winder	N5000	□ ¹¹⁾	□ ¹¹⁾	□ ¹¹⁾
Application control program for crane	N5050	□ ¹¹⁾	□ ¹¹⁾	□ ¹¹⁾
Application control program for centrifuge/decanter	N5150	□ ¹¹⁾	□ ¹¹⁾	□ ¹¹⁾
Application control program for PCP/ESP pump	N5200	□ ¹¹⁾	□ ¹¹⁾	□ ¹¹⁾
Application control program for Rod pump	N5250	□ ¹¹⁾	□ ¹¹⁾	□ ¹¹⁾
Support for asynchronous motor		●	●	●
Support for permanent magnet motor		●	●	●
Support for synchronous reluctance motor (SynRM)	N7502	□	□	–
Control panel				
Intuitive control panel		● ¹⁾	●	●
Integrated control panel holder in the drive		●	–	–
Control panel mounting platform (flush), DPMP-01		■	–	–
Control connections (I/O) and communications				
2 pcs analog inputs, programmable, galvanically isolated		●	●	●
2 pcs analog outputs, programmable		●	●	●
6 pcs digital inputs, programmable, galvanically isolated - can be divided into two groups		●	●	●
2 pcs digital inputs/outputs		●	●	●
1 pcs digital input interlock		●	●	●
3 pcs relay outputs programmable		●	●	●
Safe torque off (STO)		●	●	●
Drive-to-drive link/Built-in Modbus		●	●	●
Assistant control panel/PC tool connection		●	●	●
Possibility for external power supply for control unit		●	●	●
Built-in I/O extension and speed feedback modules: for more details see sections: "Input/output extension modules for increased connectivity", "Speed feedback interfaces for precise process control" and "DDCS communication option modules"		□	□	□
Built-in adapters for several fieldbuses: for more details see section "Flexible connectivity to automation networks"		□	□	□

Summary of features and options

Power and voltage range	Ordering code	ACS880-01	ACS880-07	ACS880-07
		R1 to R9	R6 to R11	n×R8i
		kW	kW	kW
230 V		0.55 to 75		
400 V		0.55 to 250	45 to 500	400 to 1400
500 V		0.55 to 250	45 to 560	500 to 1400
690 V		4 to 250	45 to 630	560 to 2800

EMC filters				
EMC 1 st environment, unrestricted distribution (category C2)	E202	<input type="checkbox"/> ²⁾	<input type="checkbox"/> ²⁾	–
EMC 2 nd environment, unrestricted distribution (category C3)	E200	<input type="checkbox"/> ³⁾	<input type="checkbox"/> ³⁾	–
EMC 2 nd environment, unrestricted distribution (category C3)	E201	<input type="checkbox"/> ⁴⁾	<input type="checkbox"/> ⁴⁾	–
EMC 2 nd environment, unrestricted distribution (category C3)	E210	–	<input type="checkbox"/> ⁵⁾	●
Line filter				
AC or DC choke		●	●	●
Output filters				
Common mode filter	E202	–	<input type="checkbox"/>	<input type="checkbox"/>
du/dt filters	E205	■	<input type="checkbox"/>	<input type="checkbox"/>
Braking (see braking unit table)				
Brake chopper	D150	<input type="checkbox"/> ⁶⁾	<input type="checkbox"/>	<input type="checkbox"/> ⁷⁾
Brake resistor	D151	■	<input type="checkbox"/>	<input type="checkbox"/> ⁷⁾
Rectifier bridge				
12-pulse	A004	–	–	<input type="checkbox"/>
Line side apparatus				
aR line fuses		–	●	●
Main switch		–	●	●
Line contactor	F250	–	<input type="checkbox"/>	<input type="checkbox"/>
Air circuit breaker	F255	–	–	<input type="checkbox"/> ⁸⁾
Earthing switch	F259	–	–	<input type="checkbox"/>
Cabinet options				
Cabinet heater (ext. supply)	G300	–	<input type="checkbox"/>	<input type="checkbox"/>
Output for motor heater (ext. supply)	G313	–	<input type="checkbox"/>	<input type="checkbox"/>
Customized options	P902	–	<input type="checkbox"/>	<input type="checkbox"/>
Safety options				
Safe torque off (STO)		●	●	●
FSO-11, without encoder: Safe stop 1 (SS1)	Q973	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FSO-11, without encoder: Safely-limited speed (SLS)	Q973	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FSO-11, without encoder: Safe brake control (SBC)	Q973	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FSO-11, without encoder: Safe maximum speed (SMS)	Q973	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FSO-11, without encoder: Safe stop emergency (SSE)	Q973	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prevention of unexpected startup with safety relay	Q957	–	<input type="checkbox"/>	<input type="checkbox"/>
Prevention of unexpected startup with FSO-11	Q950	–	<input type="checkbox"/> ⁹⁾	<input type="checkbox"/> ⁹⁾
Emergency stop, category 0 with opening the main contactor/ breaker, with safety relay	Q951	–	<input type="checkbox"/>	<input type="checkbox"/>
Emergency stop, category 1 with opening the main contactor/ breaker	Q952	–	<input type="checkbox"/>	<input type="checkbox"/>
Emergency stop, category 0 with STO, with safety relay	Q963	–	<input type="checkbox"/>	<input type="checkbox"/>
Emergency stop, category 1 with STO, with safety relay	Q964	–	<input type="checkbox"/>	<input type="checkbox"/>
Emergency stop, configurable category 0 or 1 with opening the main contactor/breaker, with FSO-11	Q978	–	<input type="checkbox"/> ⁹⁾	<input type="checkbox"/> ⁹⁾
Emergency stop, configurable category 0 or 1 with STO and FSO-11	Q979	–	<input type="checkbox"/> ⁹⁾	<input type="checkbox"/> ⁹⁾
Safely-limited speed without encoder, with FSO-11		–	<input type="checkbox"/> ⁹⁾	<input type="checkbox"/> ⁹⁾
Earth fault monitoring, earthed mains		●	●	●
Earth fault monitoring, unearthed mains	Q954	–	<input type="checkbox"/>	<input type="checkbox"/>
ATEX thermal motor protection		–	<input type="checkbox"/> ⁹⁾	<input type="checkbox"/> ⁹⁾
Approvals				
CE		●	●	●
UL, cUL	C121	●	<input type="checkbox"/> ¹⁰⁾	<input type="checkbox"/>
CSA	C134	● ¹³⁾	<input type="checkbox"/> ¹¹⁾	<input type="checkbox"/> ¹¹⁾
EAC/GOST R ¹²⁾		●	●	●
RoHS		●	●	●
C-Tick		●	●	●
Marine type approvals		<input type="checkbox"/> ¹¹⁾	–	–
TÜV nord certificate for safety functions		●	<input type="checkbox"/> ⁹⁾	<input type="checkbox"/> ⁹⁾

- Standard
- Selectable option, with plus code
- Selectable option, external, no plus code
- Not available

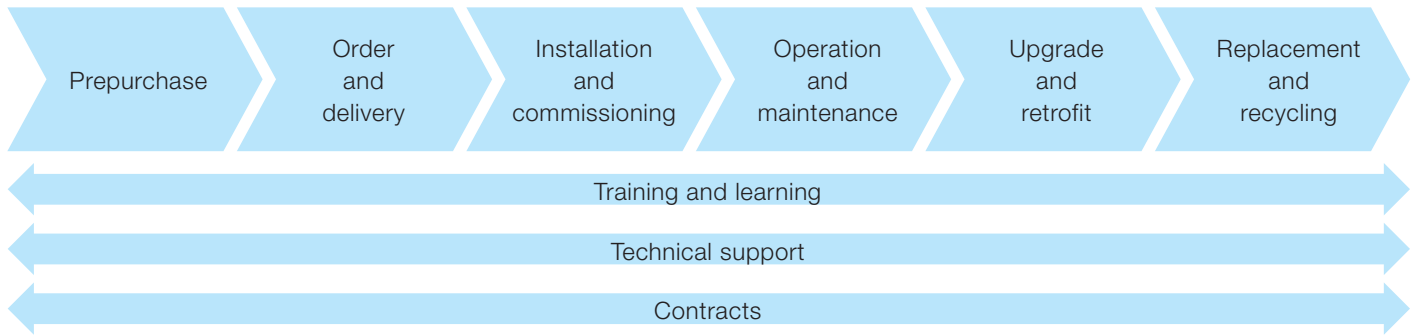
Notes

¹⁾ Without control panel, 0J400

- ²⁾ Earthed network, frame sizes R1 to R9, 380 to 500 V
- ³⁾ Earthed network, frame sizes R6 to R9, 380 to 500 V
- ⁴⁾ Unearthed network, frame sizes R6 to R9 380 to 500 V, frame sizes R7 to R9, 690 V
- ⁵⁾ Earthed/unearthed network, frame sizes R10 to R11 (380 to 500 V)
- ⁶⁾ Frame sizes R5 to R9 as selectable option, built-in

- ⁷⁾ 2×R8i
- ⁸⁾ 2×D8T to 4×D8T
- ⁹⁾ Check availability from local ABB
- ¹⁰⁾ Frame sizes R10 to R11 pending
- ¹¹⁾ Pending
- ¹²⁾ EAC will replace GOST R
- ¹³⁾ CSA pending 230 V (R4 to R8)

Expertise at every stage of the value chain



The services offered for ABB low voltage drives span the entire value chain, from the moment a customer makes the first enquiry through to disposal and recycling of the drive. Throughout the value chain, ABB provides training and learning, technical support and contracts. All of this is supported by one of the most extensive global drive sales and service networks.

Prepurchase

ABB provides a range of services that help guide the customers to the right products for their applications. Examples of services include correct drive selection and dimensioning, energy appraisal, harmonic survey and EMC assessment.

Order and delivery

Orders can be placed through any ABB office or through ABB's channel partners. Orders can be placed and tracked online.

ABB's sales and services network offers timely deliveries including express delivery.

Installation and commissioning

While many customers have the resources to undertake installation and commissioning on their own, ABB and its third party channel companies are available to advise or undertake the entire drive installation and commissioning.

Operation and maintenance

Through remote monitoring, ABB can guide the customer through a fast and efficient fault-finding procedure as well as analyze the operation of the drive and the customer's process. From maintenance assessment to preventive maintenance and reconditioning of drives, ABB has all the options covered to keep its customers' processes operational.

Should corrective maintenance of drives be needed, ABB offers on-site and workshop repair, fully backed up by the most extensive spare holding.

Upgrade and retrofit

An existing ABB drive can often be upgraded to the latest software or hardware to improve the performance of the application.

Existing processes can be economically modernized by retrofitting the latest drive technology to mechanical control equipment, such as inlet guide vanes or dampers or older generations of drives.

Instead of replacing an entire drive or drive system, it is often more economical to modernize the old installation by reusing all relevant parts of the original equipment and purchasing new where necessary.

Replacement and recycling

ABB can advise on the best replacement drive while ensuring that the existing drive is disposed in a way that meets all local environmental regulations.

Entire value chain services

The main services available throughout the value chain include:

- Training and learning – ABB offers product and application training in classrooms and on the Internet.
- Technical support – At each stage of the value chain, an ABB expert is available to offer advice to keep the customer's process or plant operational.
- Contracts – Drive care contracts and other types of agreements, from individual services through to complete drive care covering all repairs and even drive replacements, are available.

Secure uptime throughout the drive life cycle

ABB follows a four-phase model for managing the life cycles of its drives. The life cycle phases are active, classic, limited and obsolete. Within each phase, every drive series has a defined set of services.

Examples of individual services are drive selection and dimensioning, installation and commissioning, preventive and corrective maintenance, remote monitoring and intelligent diagnostics, technical support, upgrade and retrofit, replacement and recycling plus training and learning.

In the active phase the drive is in serial production. The drive, with complete life cycle services, is available for purchase.

In the classic phase, the serial production of the drive has ended. The drive, with complete life cycle services, is available for plant extensions.

In the limited phase, the drive is no longer available. The life cycle services are limited. Spare parts as well as maintenance and repair services are available as long as materials can be obtained.

In the obsolete phase, the drive is not available. ABB cannot guarantee availability of services for technical reasons or within reasonable cost.

To ensure the availability of complete life cycle services, ABB recommends that a drive is kept in the active or classic phase by upgrading, retrofitting or replacing.

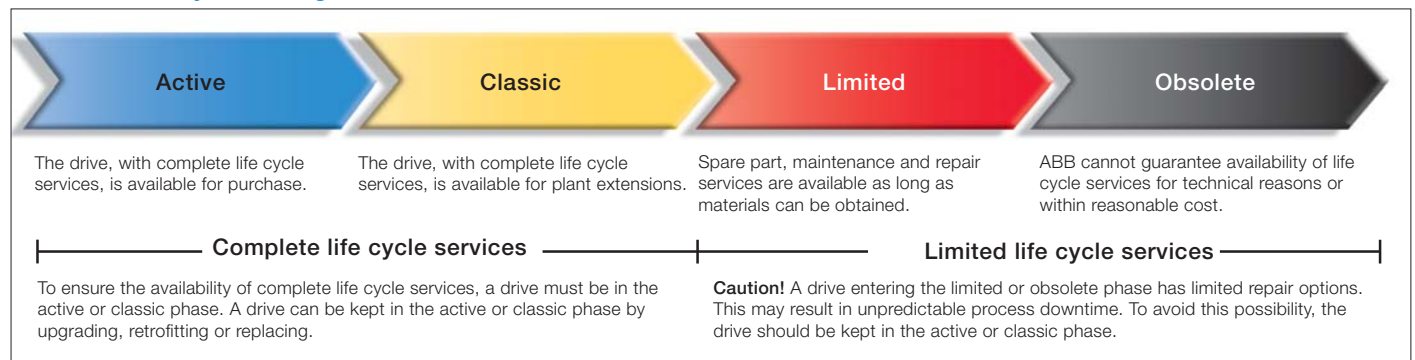
In the classic phase ABB carries out an annual review for each drive life cycle plan. Should any changes to the availability or duration of the services be necessary, ABB gives a life cycle announcement indicating eventual change of life cycle phase and/or any change in the duration of services.

In the limited phase, ABB issues a life cycle phase change announcement, half a year prior to shifting the product into the obsolete phase.

Maximizing return on investment

The four-phase life cycle management model provides customers with a transparent method for managing their investment in drives. In each phase, customers clearly see what life cycle services are available, and more importantly, what services are not available. Decisions on upgrading, retrofitting or replacing drives can be made with confidence.

ABB drive life cycle management model



Notes

Lined area for taking notes.

Contact us

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

www.abb.com/drives
www.abb.com/drivespartners

© Copyright 2014 ABB. All rights reserved.
Specifications subject to change without notice.



ACS880 single
drives web page

3AUA0000098111 REV I EN 6.2.2014 #16957