Low voltage AC drives

ABB industrial drives
ACS800, single drives
0.55 to 5600 kW
Catalog

Power and productivity
for a better world™

Selecting and ordering your drive

Build up your own ordering code using the type designation key below or contact your local ABB drives sales office and let them know what you want. Use page 3 as a reference section for more information.

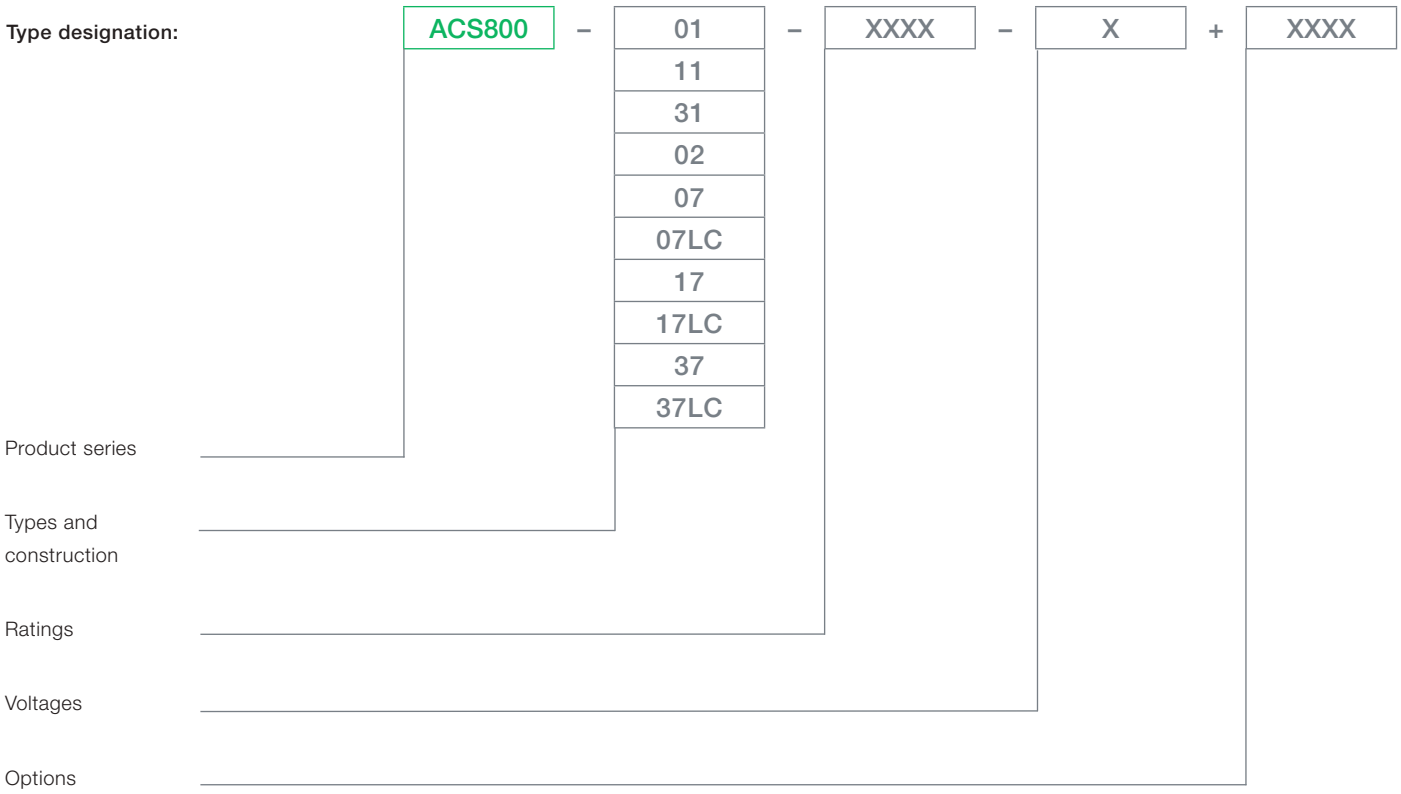

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ABB industrial drives, single drives

ABB industrial drives

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ABB industrial drives

ABB industrial drives are designed for industrial applications, and especially for applications in process industries such as the pulp & paper, metals, mining, cement, power, chemical, and oil & gas. ABB industrial drives are available both as complete AC drives and as modules to meet the requirements of the users, OEMs and system integrators. These drives are highly flexible AC drives that can be configured to meet the precise needs of industrial applications, and hence order-based configuration is an integral part of the offering. The complete drives and drive modules cover a wide range of powers and voltages, including industrial voltages up to 690 V. ABB industrial drives come with a wide range of built-in options. A key feature of these drives is programmability, which makes adaptation to different applications easy.

Industrial design

ABB industrial drives are designed with current ratings to be used in industrial environment for applications requiring high overloadability. The heart of the drive is DTC, direct torque control, that provides high performance and significant benefits: e.g. accurate static and dynamic speed and torque control, high starting torque and long motor cables. Built-in drive options make the installation work fast and easy. The robust enclosures and cabinets, with a wide range of enclosure classes, as well as power terminals, are designed for harsh environments.

One of the most significant design criteria of ABB industrial drives has been the long lifetime. Wearing parts such as fans and capacitors have been selected accordingly. This means - together with extensive protection features - excellent reliability in the demanding industrial market.

Single drives

The single drive configuration contains a rectifier, DC link and an inverter in one single AC drive unit.

The single drives are complete AC drives that can be installed without any additional cabinet or enclosure. The single drives are available as wall-mounted, free-standing and cabinet-built constructions. The protection degree of the single drives is at least IP21, and higher protection degrees are available as an option.

Type designation

This is the unique reference number that clearly identifies your drive by construction, power rating voltage and selected options. By type designation you can specify your drives from the wide range of available options, customer specific ones are added to the type designation using the corresponding + code.

Functional safety

The ABB functional safety solution complies with the requirements of the new European Union machinery directive 2006/42/EC. This directive is associated with standards like IEC 62061 (Safety Integrity Level) and ISO 13849-1 (Performance Level), which require both a documented and proven safety performance and lifecycle approach to safety. Safe torque-off (STO) is a certified solution offering SIL2 and PL d (Cat.2) safety levels.

ABB drives can be provided, as an option, with the safe torque-off function. Safe torque-off (STO) can be used for the prevention of unexpected startup and represents a cost-effective and certified solution for basic safety. Other safety functions for cabinet-built drives include Safe Stop 1 (SS1) and Safely-Limited Speed (SLS), which can be used to achieve SIL2 or PL d (Cat.2) safety levels.

Other products
Please also see the separate technical catalogues ACS800, multidrives, code 3AFE68248531 EN and ACS800, drive modules, code 3AFE68404592 EN.

ABB industrial drives

ACS800 – 01 / 11 – XXXX – X + XXXX

Wall-mounted drives, ACS800-01

The wall-mounted drive, ACS800-01 offers all that you need up to 200 kW. All important features and options are built inside the drive: line choke, EMC filter, brake chopper etc. The user gets everything in a single and complete IP21 or IP55 package. Still the drive is also extremely small. A wide range of software alternatives makes this drive suitable for any application.

Wall-mounted drives, ACS800-01 for marine applications

The type approved ACS800-01 marine drive provides advanced reliability and availability at sea. The drive fulfil marine and offshore requirements, and the design and operation have been tested according to marine type approval requirements. The ACS800-01 has marine type approvals from ABS, BV, DNV, GL, Lloyd's, and RINA.

Wall-mounted regenerative drives, ACS800-11

The wall-mounted regenerative drive, ACS800-11 is equipped with active supply unit. It offers a full performance regenerative drive in a single compact package. All important features and options including an LCL line filter and EMC filter are built inside the drive. The power ratings start from 5.5 kW and go up to 110 kW. It is available with IP21 protection degree.

ACS800-01, IP21 construction

ACS800-01, IP55 construction

ACS800-11

ACS800 – 31 / 02 – XXXX – X + XXXX

Wall-mounted low harmonic drives, ACS800-31

The wall-mounted low harmonic drive, ACS800-31 offers a unique harmonics solution that is incorporated into the drive. It has exceptionally low line harmonic content and it fulfils even the strictest harmonic requirements without external filtering devices or multi-pulse transformer arrangements.

The wall-mounted ACS800-31 offers a low harmonic drive in one complete package up to 110 kW. Similar to other wall-mounted drives, it has all the important features and options built inside the drive. It is available with IP21 protection degree.

Free-standing drives, ACS800-02

The free-standing drive, ACS800-02 is an innovative bookshelf enclosure. The power ratings start from 45 kW and go up to 560 kW. The ACS800-02 is available in an extremely compact IP21 enclosure and uniquely offers two mounting directions. It also offers a wide range of built-in options including EMC filters, brake choppers and fieldbus modules.

ACS800-31

ACS800-02

ACS800 – 07 / 07LC – XXXX – X + XXXX

Cabinet-built drives, ACS800-07

The cabinet-built drive, ACS800-07 offers standardized configurations that can be adapted to any application. It covers a wide power range up to 2800 kW and is very compact, the largest drive is only 3.2 meters wide. It is available with IP21, IP22, IP42, IP54 and IP54R protection degrees. A wide range of built-in options is available and application engineering services can be offered when customization is needed.

Liquid-cooled drives, ACS800-07LC

ACS800 liquid-cooled frequency converter offers robust design for medium and high power applications. The compact size with a totally enclosed cabinet is optimised for harsh environmental conditions. The ACS800 liquid-cooled product series provides advanced reliability for both industrial and marine sector. Liquid cooling minimises the noise level and improves heat transfer without a need for air conditioning equipment. A wide range of built-in options is available.

ACS800-07

ACS800-07LC

ACS800 – 17 / 17LC – XXXX – X + XXXX

Cabinet-built regenerative drives, ACS800-17

The cabinet-built drive, ACS800-17 is equipped with active supply unit. It is intended to drive applications where regenerative operation is required. It covers a wide power range from 45 to 2500 kW and has an extensive range of standardized configurations that can be adapted to any application. It is available with IP21, IP22, IP42, IP54 and IP54R protection degrees. A wide range of built-in options is available and application engineering services can be offered when customization is needed.

Cabinet-built liquid-cooled regenerative drives, ACS800-17LC

The ACS800 liquid-cooled regenerative drive incorporates two technologically advanced solutions in one compact, totally enclosed cabinet: liquid cooling provides high reliability while regeneration delivers significant energy savings. Covering a wide power range from 55 to 5200 kW, the drive is available with IP42 as standard and IP54 as an option. The design is marine type approved. A wide range of built-in options is available.

ACS800-17

ACS800-17LC

ACS800 – 37 / 37LC – XXXX – X + XXXX

Cabinet-built low harmonic drives, ACS800-37

The ACS800-37 cabinet-built drive is a low harmonic solution in the power range of 37 kW up to 2700 kW. It offers a unique harmonics solution that is incorporated into the drive. Like other cabinet-built single drives, it has a wide range of standardized configurations and is available with IP21, IP22, IP42, IP54 and IP54R protection degrees. Application engineering services can be offered when customization is needed. A wide range of built-in options is available and application engineering services can be offered when customization is needed.

Cabinet-built liquid-cooled low harmonic drives, ACS800-37LC

The ACS800-37LC is a cabinet-built liquid-cooled low harmonic drive and therefore offers a solution for both low harmonic needs and harsh ambient conditions. Liquid cooling removes 98% of the heat generated, so the totally enclosed cabinet requires no additional air conditioning. With a power range from 55 to 5200 kW, this drive meets the requirement of many applications. It is especially suitable for use in the marine sector. A wide range of built-in options is available.

ACS800-37

ACS800-37LC

Single drive main features

Feature	Advantage	Benefit
Compact and complete		
Compact size, everything integrated	Less space and installation work required.	No need to install extra components such as input chokes or EMC filter.
Built-in harmonic filter in all ACS800 drives	Low harmonics, meaning less interference and less heating in cables and transformers. Filter also protects the drive from line side transients.	For the lowest harmonic level, ACS800-31/-37/-37LC offer almost a harmonic free solution.
Wide range of options available	Standard solutions available from ABB that meets most of the customer needs.	Custom made solutions are available in the ACS800-07/-17/-17LC/-37/-37LC.
Versatile braking options	Always the optimal braking option available. No need for external braking chopper thus reducing size and installation cost.	Brake chopper built-in in all frame sizes (standard/optional). Regenerative braking with ACS800-11/-17/-17LC.
User interface		
User friendly customer interface	Easy and fast commissioning and operation.	Clear, alphanumeric display with startup assistant that guides through the startup procedure. Easy to use PC tools available for commissioning, maintenance, monitoring and programming.
Versatile connections and communications	Standard I/O covers most requirements. Connectable to commonly used fieldbuses.	Extensive standard and optional I/O. I/O fulfills PELV (EN 50178).
Extensive programmability	Flexibility. Possible to replace relays or even PLC in some applications.	Two levels of programmability: 1. Parameter programming (standard) 2. Adaptive programming (free block programming) - standard feature - more blocks available as options - all I/Os are programmable
Industrial design		
Wide power and voltage range	One product series suits everywhere, meaning less training and spare parts and standardized interface to drives.	
Wide range of robust enclosures available	Suitable solutions available for different environments.	IP21 - IP55.
Robust main circuit design	Suitable for heavy industrial use. Reliable. Long motor cables can be used without extra output filters.	Components dimensioned for heavy duty and long lifetime. Advanced thermal model allows high overloadability.

Feature	Advantage	Benefit
Industrial design		
Extensive protections	Enhanced reliability, fewer process interruptions. Possibility also to protect motors and process.	Several adjustable limits to protect other equipment also.
Galvanic isolation of I/O	Safe and reliable operation without separate isolators and relays.	Isolated input signals and relay outputs as standard.
All terminals designed for industrial use	Sufficient size even for large aluminum cables. No need for special tools in I/O cabling.	
Worldwide approvals: CE, UL, cUL, CSA, C-Tick, GOST R	Safe products that can be used everywhere in the world.	
Right performance for every application		
DTC, accurate dynamic and static speed and torque control	Excellent process control even without pulse encoder - improved product quality, productivity, reliability and lower investment cost.	
DTC - allows high overloadability and gives high starting torque	Reliable, smooth start without overdimensioning the drive.	
DTC, fast control	No unnecessary trips and process interruptions.	Fast reaction to load or voltage variations prevents tripping. Rides through power interruptions by using kinetic energy of the load.
DTC, flux optimization and sophisticated motor model	Excellent motor and drive efficiency - cost savings.	Optimal flux in the motor reduces losses.
DTC, mechanics friendly	Less stress for mechanics improves reliability.	No shock torques. No torque ripple - minimized risk for torsional vibration. Active oscillation damping.
DTC, line supply control	High performance and robust control in active supply unit.	Applies for ACS800-11/-17/-17LC.
Made in ABB		
Global market leader in AC drives. Long experience.	Well proven, safe and reliable solutions. Application know-how.	
World wide service and support network	Professional support available around the world.	

Technical data

Mains connection	
Voltage and power range	3-phase, U_{2IN} = 208 to 240 V, ± 10%, except -07, -07LC, -17, -17LC, -37, -37LC 3-phase, U_{3IN} = 380 to 415 V, ± 10% 3-phase, U_{5IN} = 380 to 500 V, ± 10% 3-phase, U_{7IN} = 525 to 690 V, ± 10% (600 V UL, CSA)
Frequency	48 to 63 Hz
Power factor	$\cos\varphi_1$ = 0.98 (fundamental) $\cos\varphi$ = 0.93 to 0.95 (total)
Power factor (ACS800-11/-31/-17/-17LC/-37/-37LC)	$\cos\varphi_1$ = 1 (fundamental) $\cos\varphi$ = 0.99 (total)
Efficiency (at nominal power)	
ACS800-0x	98%
ACS800-1x/-3x	97%

Motors connection	
Voltage for > 500 V units	3-phase output voltage 0 to $U_{2IN}/U_{3IN}/U_{5IN}/U_{7IN}$ please see "Filter selection table for ACS800" under the du/dt filters on page 46
Frequency	0 to ±300 Hz (0 to ±120 Hz with optional du/dt filters)
Field weakening point	8 to 300 Hz
Motor control	ABB's 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%sec. with 100% torque step
Closed loop	0.1 to 0.2%sec. with 100% torque step

Product compliance

CE
Low Voltage Directive 2006/95/EC
Machinery Directive 2006/42/EC
EMC Directive 2006/108/EC
Quality assurance system ISO 9001 and
Environmental system ISO 14001
UL, cUL 508A or 508C and CSA C22.2 NO.14-95, C-Tick, GOST R

EMC according to EN 61800-3/A11 (2000), EN 61800-3 (2004)

2nd environment, unrestricted distribution, category C3 - standard in -07 (frame size n×R8i), -07LC, -17, -17LC, -37 and -37LC (frame sizes R7i-n×R8i), option in the others.
1st environment, restricted distribution (category C2) as options up to 1000 A input current.

Environmental limits	
Ambient temperature	
Transport	-40 to +70 °C
Storage	-40 to +70 °C
Operation	
Air cooled	-15 to +50 °C, no frost allowed +40 to +50 °C at reduced output current (1%/1 °C)
Liquid-cooled	0 to +55 °C, no frost allowed +45 to +55 °C at reduced output current (0.5%/1 °C)
Cooling method	
Air cooled	Dry clean air
Liquid-cooled	Direct liquid-cooling
Altitude	
0 to 1000 m	Without derating
1000 to 4000 m	With derating ~ (1%/100 m) (690 V units 1000 to 2000 m with derating)
Relative humidity	5 to 95%, no condensation allowed
Degree of protection	
IP21	Standard for -01, -11, -31, -02, -07, -17, -37
IP22	Option for -07, -17, -37
IP42	Standard for -07LC, -17LC, -37LC, option for -07, -17, -37
IP54	Option for -07, -07LC, -17, -17LC, -37, -37LC
IP54R	Option for -07, -17, -37
IP55	Option for -01
R = outlet air duct connection	
Paint colour	-07, -07LC, -17, -17LC, -37, -37LC: RAL 7035 -01, -11, -31, -02: NCS 1502-Y (RAL 9002, PMS 420 C)
Contamination levels	No conductive dust allowed
Storage	IEC60721-3-1, Class 1C2 (chemical gases), Class 1S2 (solid particles)
Transportation	IEC60721-3-2, Class 2C2 (chemical gases), Class 2S2 (solid particles)
Operation	IEC60721-3-3, Class 3C1/3C2* (chemical gases), Class 3S2 (solid particles)
Vibration marine classification	3 to 13.2 Hz: ±1 mm amplitude (peak) 13.2 to 100 Hz: 0.7 g acceleration

C = Chemically active substances
S = Mechanically active substances
* coated circuit boards

Available options are shown in the Summary of features and options table. Please see pages 62-63.

Wall-mounted drives
ACS800-01, up to 200 kW

Compact and complete drive

The ACS800-01 offers all that you need in a single, extremely small, wall-mounted package making it a compact and complete drive. The standard degree of protection is IP21. Optional IP55 allows equal performance without additional derating. Power ratings start from 0.55 kW heavy-duty rating and go up to 200 kW continuous load rating. There are five different mechanical frame sizes covering the power range. Each frame size is optimized in performance, size and weight.

Everything inside

From the smallest to the biggest ACS800-01 there is an extensive range of built-in features and options. Standard features include a choke for harmonic filtering and drive protection, extensive and flexible I/O, user-friendly control panel with Startup assistant feature and a silent, long lifetime cooling fan. Brake chopper is included as standard in the two smallest frame sizes R2 and R3 as well as in the 690 V R4 frame. In other frames the chopper is an built-in option. External options include EMC filters and extension modules for additional I/O, fieldbus and pulse encoder.

Main standard hardware features

- Wall mounting
- IP21 protection degree
- Compact design
- Harmonic filtering choke inside
- Input rectifier protection
- Brake chopper (in frame sizes R2-R3; R4 only 690 V)
- Long lifetime cooling fan and capacitors
- Extensive, programmable I/O with galvanically isolated inputs
- Three I/O and fieldbus extension slots inside
- Alphanumeric, multilingual control panel with startup assistant feature
- Large power terminals allowing use of a wide range of cable sizes

Options for ACS800-01

Built-in options:

- IP55 protection degree
- Brake chopper (in frame sizes R4-R6)
- EMC filter for 1st environment, restricted distribution according to EN 61800-3 (category C2)
- EMC filter for 2nd environment, unrestricted distribution according to EN 61800-3 (category C3)
- Analog and digital I/O extension modules
- Fieldbus modules
- Pulse encoder interface module

External options:

- Brake resistor
- Output filters
- Safe torque-off (STO)

Marine type approved design as an option.

Ratings, types and voltages
ACS800-01

ACS800 – 01 – XXXX – 2 / 3 + XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
$I_{cont.\ max}$ A	I_{max} A	$P_{cont.\ max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	W	m³/h		
U_N = 230 V (Range 208 to 240 V). The power ratings are valid at nominal voltage 230 V.											
5.1	6.5	1.1	4.7	0.75	3.4	0.55	62	100	35	ACS800-01-0001-2	R2
6.5	8.2	1.5	6	1.1	4.3	0.75	62	100	35	ACS800-01-0002-2	R2
8.5	10.8	1.5	7.7	1.5	5.7	1.1	62	100	35	ACS800-01-0003-2	R2
10.9	13.8	2.2	10.2	2.2	7.5	1.5	62	120	35	ACS800-01-0004-2	R2
13.9	17.6	3	12.7	3	9.3	2.2	62	140	35	ACS800-01-0005-2	R2
19	24	4	18	4	14	3	62	160	69	ACS800-01-0006-2	R3
25	32	5.5	24	5.5	19	4	62	200	69	ACS800-01-0009-2	R3
34	46	7.5	31	7.5	23	5.5	62	250	69	ACS800-01-0011-2	R3
44	62	11	42	11	32	7.5	62	340	103	ACS800-01-0016-2	R4
55	72	15	50	11	37	7.5	62	440	103	ACS800-01-0020-2	R4
72	86	18.5	69	18.5	49	11	65	530	250	ACS800-01-0025-2	R5
86	112	22	80	22	60	15	65	610	250	ACS800-01-0030-2	R5
103	138	30	94	22	69	18.5	65	810	250	ACS800-01-0040-2	R5
141	164	37	132	37	97	30	65	1190	405	ACS800-01-0050-2	R6
166	202	45	155	45	115	30	65	1190	405	ACS800-01-0060-2	R6
202	282	55	184	55	141	37	65	1440	405	ACS800-01-0070-2	R6
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V.											
5.1	6.5	1.5	4.7	1.5	3.4	1.1	62	100	35	ACS800-01-0003-3	R2
6.5	8.2	2.2	5.9	2.2	4.3	1.5	62	120	35	ACS800-01-0004-3	R2
8.5	10.8	3	7.7	3	5.7	2.2	62	140	35	ACS800-01-0005-3	R2
10.9	13.8	4	10.2	4	7.5	3	62	160	35	ACS800-01-0006-3	R2
13.9	17.6	5.5	12.7	5.5	9.3	4	62	200	35	ACS800-01-0009-3	R2
19	24	7.5	18	7.5	14	5.5	62	250	69	ACS800-01-0011-3	R3
25	32	11	24	11	19	7.5	62	340	69	ACS800-01-0016-3	R3
34	46	15	31	15	23	11	62	440	69	ACS800-01-0020-3	R3
44	62	22	41	18.5	32	15	62	530	103	ACS800-01-0025-3	R4
55	72	30	50	22	37	18.5	62	610	103	ACS800-01-0030-3	R4
72	86	37	69	30	49	22	65	810	250	ACS800-01-0040-3	R5
86	112	45	80	37	60	30	65	990	250	ACS800-01-0050-3	R5
103	138	55	94	45	69	37	65	1190	250	ACS800-01-0060-3	R5
145	170	75	141	75	100	45	65	1440	405	ACS800-01-0075-3	R5
166	202	90	155	75	115	55	65	1940	405	ACS800-01-0100-3	R6
202	282	110	184	90	141	75	65	2310	405	ACS800-01-0120-3	R6
225	326	110	220	110	163	90	65	2810	405	ACS800-01-0135-3	R6
260	326	132	254	132	215	110	65	3260	405	ACS800-01-0165-3	R6
290	351	160	285	160	234	132	65	4200	405	ACS800-01-0205-3	R6

Ratings, types and voltages
ACS800-01

ACS800 – 01 – XXXX – 5/7 + XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	W	m³/h		
U_N = 500 V (Range 380 to 500 V). The power ratings are valid at nominal voltage 500 V.											
4.9	6.5	2.2	4.5	2.2	3.4	1.5	62	120	35	ACS800-01-0004-5	R2
6.2	8.2	3	5.6	3	4.2	2.2	62	140	35	ACS800-01-0005-5	R2
8.1	10.8	4	7.7	4	5.6	3	62	160	35	ACS800-01-0006-5	R2
10.5	13.8	5.5	10	5.5	7.5	4	62	200	35	ACS800-01-0009-5	R2
13.2	17.6	7.5	12	7.5	9.2	5.5	62	250	35	ACS800-01-0011-5	R2
19	24	11	18	11	13	7.5	62	340	69	ACS800-01-0016-5	R3
25	32	15	23	15	18	11	62	440	69	ACS800-01-0020-5	R3
34	46	18.5	31	18.5	23	15	62	530	69	ACS800-01-0025-5	R3
42	62	22	39	22	32	18.5	62	610	103	ACS800-01-0030-5	R4
48	72	30	44	30	36	22	62	810	103	ACS800-01-0040-5	R4
65	86	37	61	37	50	30	65	990	250	ACS800-01-0050-5	R5
79	112	45	75	45	60	37	65	1190	250	ACS800-01-0060-5	R5
96	138	55	88	55	69	45	65	1440	250	ACS800-01-0070-5	R5
145	170	90	141	90	100	55	65	2150	405	ACS800-01-0105-5	R5
157	202	90	145	90	113	75	65	2310	405	ACS800-01-0120-5	R6
180	282	110	163	110	141	90	65	2810	405	ACS800-01-0140-5	R6
225	326	132	220	132	163	110	65	3260	405	ACS800-01-0165-5	R6
260	326	160	254	160	215	132	65	3800	405	ACS800-01-0205-5	R6
290	351	200	285	200	234	160	65	4500	405	ACS800-01-0255-5	R6
U_N = 690 V (Range 525 to 690 V). The power ratings are valid at nominal voltage 690 V.											
13	14	11	11.5	7.5	8.5	5.5	62	300	103	ACS800-01-0011-7	R4
17	19	15	15	11	11	7.5	62	340	103	ACS800-01-0016-7	R4
22	28	18.5	20	15	15	11	62	440	103	ACS800-01-0020-7	R4
25	38	22	23	18.5	19	15	62	530	103	ACS800-01-0025-7	R4
33	44	30	30	22	22	18.5	62	610	103	ACS800-01-0030-7	R4
36	54	30	34	30	27	22	62	690	103	ACS800-01-0040-7	R4
51	68	45	46	37	34	30	65	840	250	ACS800-01-0050-7	R5
57	84	55	52	45	42	37	65	1010	405	ACS800-01-0060-7	R5
79	104	75	73	55	54	45	65	1220	405	ACS800-01-0070-7	R6
93	124	90	86	75	62	55	65	1650	405	ACS800-01-0100-7	R6
113	172	110	108	90	86	75	65	1960	405	ACS800-01-0120-7	R6
134	190	132	125	110	95	90	65	2660	405	ACS800-01-0145-7	R6
166	245	160	155	132	131	110	65	3470	405	ACS800-01-0175-7	R6
190	245	160	180	160	147	132	65	4180	405	ACS800-01-0205-7	R6

Enclosure

Degree of protection:
IP21 (Standard)
IP55 (Optional)
Paint color: NCS 1502-Y (RAL 9002/PMS 420C)

Dimensions

Frame size	IP21					IP55			
	H1 mm	H2 mm	W1 mm	Depth mm	Weight kg	H1 mm	W1 mm	Depth mm	Weight kg
R2	405	370 A)	165	226	9	528	263	241	16
R3	471	420 A)	173	265	14	528	263	273	18
R4	607	490 A)	240	274	26	774	377	278	33
R5	739	602 A)	265	286	34	775	377	308	51
R6	880 B)	700 A)	300	399	67 B)	923 C)	420	420 C)	77 C)

H1 = Height with cable connection box
H2 = Height without cable connection box
W1 = Width of the standard unit

A) ACS800-01 without cable connection box does not fulfill IP21 requirements.
B) In -0205-3 and -0255-5 units, H1 is 977 mm and weight is 70 kg.
C) In -0205-3 and -0255-5 units, H1 is 994 mm, depth 424 mm and weight is 80 kg.

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 40 °C.
I_{max}	Maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd}.
Typical ratings: No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous current allowing 110% I_N for 1 min / 5 min at 40 °C.
P_N	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 current ratings are the same regardless of the supply voltage within one voltage range.

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

Wall-mounted regenerative drives
ACS800-11, up to 110 kW

Wall-mounted regenerative drive

The ACS800-11 is a wall-mounted drive equipped with active supply unit. It offers a full performance regenerative drive in one compact package. The drive has extensive selection of built-in features and options. The power ratings start from 5.5 kW heavy-duty rating and go up to 110 kW continuous rating. It is available with IP21 protection degree.

Complete regenerative drive

The ACS800-11 offers you a complete regenerative drive in a single, compact wall-mounted package. All the functions of a regenerative drive, such as active supply unit, LCL line filter and charging circuitry, are integrated inside the drive. All this makes it possible to save installation time and space on the site, and also prevents installation mistakes as the drive is tested at the factory as a complete package.

Energy savings

The regenerative drive offers significant energy savings compared with other braking methods such as mechanical and resistor braking, as energy is fed back to the network. No external brake resistor is needed, which translates into simplified installation and no wasted heat.

Main standard hardware features

- Wall mounting
- IP21 protection degree
- LCL line filter inside
- Active supply unit inside
- Long lifetime cooling fan and capacitors
- Extensive, programmable I/O with galvanically isolated inputs
- Three I/O and fieldbus extension slots inside
- Alphanumeric, multilingual control panel with startup assistant feature
- Large power terminals allowing the use of a wide range of cable sizes

Options for ACS800-11

Built-in options:

- EMC filter for 1st environment, restricted distribution according to EN 61800-3 (category C2)
- EMC filter for 2nd environment, unrestricted distribution according to EN 61800-3 (category C3)
- Analog and digital I/O extension modules
- Fieldbus modules
- Pulse encoder interface module
- Control solution software

External options:

- Output filters
- Safe torque-off (STO)

Ratings, types and voltages
ACS800-11

ACS800 – 11 – XXXX – 2 / 3 / 5 / 7 + XXXX

Nominal rating		No-overload use	Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	W	m³/h		
U_N = 230 V (Range 208 to 240 V). The power ratings are valid at nominal voltage 230 V.											
34	52	7.5	32	7.5	26	5.5	70	505	350	ACS800-11-0011-2	R5
47	68	11	45	11	38	7.5	70	694	350	ACS800-11-0016-2	R5
59	90	15	56	15	45	11	70	910	350	ACS800-11-0020-2	R5
75	118	22	69	18.5	59	15	70	1099	350	ACS800-11-0025-2	R5
88	137	22	83	22	72	18.5	70	1315	350	ACS800-11-0030-2	R5
120	168	37	114	30	84	22	73	1585	405	ACS800-11-0040-2	R6
150	234	45	143	45	117	30	73	2125	405	ACS800-11-0050-2	R6
169	264	45	157	45	132	37	73	2530	405	ACS800-11-0060-2	R6
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V.											
34	52	15	32	15	26	11	70	550	350	ACS800-11-0016-3	R5
38	61	18.5	36	18.5	34	15	70	655	350	ACS800-11-0020-3	R5
47	68	22	45	22	38	18.5	70	760	350	ACS800-11-0025-3	R5
59	90	30	56	30	45	22	70	1000	350	ACS800-11-0030-3	R5
72	118	37	69	37	59	30	70	1210	350	ACS800-11-0040-3	R5
86	137	45	83	45	65	30	70	1450	350	ACS800-11-0050-3	R5
120	168	55	114	55	88	45	73	1750	405	ACS800-11-0060-3	R6
150	234	75	143	75	117	55	73	2350	405	ACS800-11-0070-3	R6
165	264	90	157	75	132	75	73	2800	405	ACS800-11-0100-3	R6
U_N = 500 V (Range 380 to 500 V). The power ratings are valid at nominal voltage 500 V.											
31	52	18.5	29	18.5	25	15	70	655	350	ACS800-11-0020-5	R5
36	61	22	34	22	30	18.5	70	760	350	ACS800-11-0025-5	R5
47	68	30	45	30	37	22	70	1000	350	ACS800-11-0030-5	R5
58	90	37	55	37	47	30	70	1210	350	ACS800-11-0040-5	R5
70	118	45	67	45	57	37	70	1450	350	ACS800-11-0050-5	R5
82	130	55	78	45	62 [1]	37	70	1750	350	ACS800-11-0060-5	R5
120	168	75	114	75	88	55	73	2350	405	ACS800-11-0070-5	R6
139	234	90	132	90	114	75	73	2800	405	ACS800-11-0100-5	R6
156	264	110	148 [2]	90	125	75	73	3400	405	ACS800-11-0120-5	R6
U_N = 690 V (Range 525 to 690 V). The power ratings are valid at nominal ratings 690 V.											
57 [3]	86	55	54	45	43	37	76	1750	405	ACS800-11-0060-7	R6
79	120	75	75	55	60	55	76	2350	405	ACS800-11-0070-7	R6
93 [4]	142	90	88	75	71	55	76	2800	405	ACS800-11-0100-7	R6

Notes:
1) 65 A is allowed at 460 V.
2) 156 A is allowed at 460 V.
3) 62 A is allowed at 575 V.
4) 99 A is allowed at 575 V.

Enclosure
Degree of protection: IP21 (Standard)
Paint color: NCS 1502-Y (RAL 9002/PMS 420C)

Dimensions

Frame size	IP21			
	Height mm	Width mm	Depth mm	Weight kg
R5	816	265	390	62
R6	970	300	440	100

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 40 °C.
I_{max}	Maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd}.
Typical ratings: No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous current allowing 110% I_N for 1 min / 5 min at 40 °C.
P_N	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 current ratings are the same regardless of the supply voltage within one voltage range.

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

For sine filter selections and ratings, contact ABB.

Wall-mounted low harmonic drives
ACS800-31, up to 110 kW

Easy low harmonic solution

There is increasing concern among end users and power companies about the harmful effects of harmonics. Harmonic distortion may disturb or even damage sensitive equipment connected in the same environment. Harmonics also cause additional losses in the network. Harmonic standards are thus becoming stricter and there is a growing demand for low harmonic solutions.

ABB's low harmonic drives offer an easy low harmonic solution incorporated in the drive. The solution to overcome harmonic issues simply comes with the drive without the need for additional filtering equipment or complicated multi-pulse transformer arrangements.

Compact solution

The ACS800-31 is low harmonic drive in a single, complete wall-mounted package. It has an active supply unit and low harmonic line filter integrated in the drive resulting in less cabling and installation work on site. This compact drive package itself has extremely low line harmonics and thus meets the strictest harmonic standards without any need for additional filtering equipment. Due to the active supply unit it always operates with power factor 1.

The power ratings of the ACS800-31 start from 5.5 kW heavy duty rating and go up to 110 kW continuous load rating. It is available in the IP21 protection degree. In line with the ACS800 series, an extensive range of external options are available including EMC filters and extension modules for additional I/O.

Main standard hardware features

- Wall-mounting
- IP21 protection degree
- Active supply unit inside
- Low harmonic filter inside
- Long lifetime cooling fan and capacitors
- Extensive, programmable I/O with galvanically isolated inputs
- Three I/O and fieldbus extension slots inside
- Alphanumeric, multilingual control panel with startup assistant feature
- Large power terminals allowing the use of a wide range of cable sizes

Options for ACS800-31

Built-in options:

- EMC filter for 1st environment, restricted distribution according to EN 61800-3 (category C2)
- EMC filter for 2nd environment, unrestricted distribution according to EN 61800-3 (category C3)
- Analog and digital I/O extension modules
- Fieldbus modules
- Pulse encoder interface module

External options:

- Output filters
- Brake chopper and resistor
- Safe torque-off (STO)

Ratings, types and voltages
ACS800-31

ACS800	–	31	–	XXXX	–	2 3 5 7	+	XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
$I_{cont.\ max}$ A	I_{max} A	$P_{cont.\ max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	W	m^3/h		
U_N = 230 V (Range 208 to 240 V). The power ratings are valid at nominal voltage 230 V.											
34	52	7.5	32	7.5	26	5.5	70	505	350	ACS800-31-0011-2	R5
47	68	11	45	11	38	7.5	70	694	350	ACS800-31-0016-2	R5
59	90	15	56	15	45	11	70	910	350	ACS800-31-0020-2	R5
75	118	22	69	18.5	59	15	70	1099	350	ACS800-31-0025-2	R5
88	137	22	83	22	72	18.5	70	1315	350	ACS800-31-0030-2	R5
120	168	37	114	30	84	22	73	1585	405	ACS800-31-0040-2	R6
150	234	45	143	45	117	30	73	2125	405	ACS800-31-0050-2	R6
169	264	45	157	45	132	37	73	2530	405	ACS800-31-0060-2	R6
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V.											
34	52	15	32	15	26	11	70	550	350	ACS800-31-0016-3	R5
38	61	18.5	36	18.5	34	15	70	655	350	ACS800-31-0020-3	R5
47	68	22	45	22	38	18.5	70	760	350	ACS800-31-0025-3	R5
59	90	30	56	30	45	22	70	1000	350	ACS800-31-0030-3	R5
72	118	37	69	37	59	30	70	1210	350	ACS800-31-0040-3	R5
86	137	45	83	45	65	30	70	1450	350	ACS800-31-0050-3	R5
120	168	55	114	55	88	45	73	1750	405	ACS800-31-0060-3	R6
150	234	75	143	75	117	55	73	2350	405	ACS800-31-0070-3	R6
165	264	90	157	75	132	75	73	2800	405	ACS800-31-0100-3	R6
U_N = 500 V (Range 380 to 500 V). The power ratings are valid at nominal voltage 500 V.											
31	52	18.5	29	18.5	25	15	70	655	350	ACS800-31-0020-5	R5
36	61	22	34	22	30	18.5	70	760	350	ACS800-31-0025-5	R5
47	68	30	45	30	37	22	70	1000	350	ACS800-31-0030-5	R5
58	90	37	55	37	47	30	70	1210	350	ACS800-31-0040-5	R5
70	118	45	67	45	57	37	70	1450	350	ACS800-31-0050-5	R5
82	130	55	78	45	62 [1]	37	70	1750	350	ACS800-31-0060-5	R5
120	168	75	114	75	88	55	73	2350	405	ACS800-31-0070-5	R6
139	234	90	132	90	114	75	73	2800	405	ACS800-31-0100-5	R6
156	264	110	148 [2]	90	125	75	73	3400	405	ACS800-31-0120-5	R6
U_N = 690 V (Range 525 to 690 V). The power ratings are valid at nominal voltage 690 V.											
57 [3]	86	55	54	45	43	37	76	1750	405	ACS800-31-0060-7	R6
79	120	75	75	55	60	55	76	2350	405	ACS800-31-0070-7	R6
93 [4]	142	90	88	75	71	55	76	2800	405	ACS800-31-0100-7	R6

Notes:
1) 65 A is allowed at 460 V.
2) 156 A is allowed at 460 V.
3) 62 A is allowed at 575 V.
4) 99 A is allowed at 575 V.

Enclosure
Degree of protection: IP21 (Standard)
Paint color: NCS 1502-Y (RAL 9002/PMS 420C)

Dimensions

Frame size	IP21			
	Height mm	Width mm	Depth mm	Weight kg
R5	816	265	390	62
R6	970	300	440	100

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 40 °C.
I_{max}	Maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd}.
Typical ratings: No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous current allowing 110% I_N for 1 min / 5 min at 40 °C.
P_N	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 current ratings are the same regardless of the supply voltage within one voltage range.

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

For sine filter selections and ratings, contact ABB.

Free-standing drives
ACS800-02, up to 560 kW

Compact and complete drive
The ACS800-02 single drive is a unique, extremely compact bookshelf-style unit with a innovative free-standing enclosure. The power ratings start from 45 kW heavy duty rating and go up to 560 kW continuous load rating. It is available in IP21 protection degree.

Fits anywhere
The ACS800-02 drive is extremely compact without sacrificing user-friendliness. When using bookshelf mounting, even side-by-side installation is possible. In addition to bookshelf mounting, the ACS800-02 offers the possibility for flat type (sideways) mounting, making it possible to optimize depth instead of width.

Everything inside
The ACS800-02 has an extensive selection of built-in features and options. Standard features include a choke for harmonic filtering and drive protection, extensive and flexible I/O, user-friendly control panel with Startup assistant feature and a silent, long lifetime cooling fan.

Built-in options include EMC filters, brake chopper, common mode filter for motor protection and extension modules for additional I/O, fieldbus and pulse encoder.

Main standard hardware features
- Free-standing
- IP21 protection degree
- Very narrow bookshelf design
- Two mounting directions as standard enabling optimization of depth
- Harmonic filtering choke inside
- Input rectifier protection
- Long lifetime cooling fan and capacitors
- Extensive, programmable I/O with galvanically isolated inputs
- Three I/O and fieldbus extension slots inside
- Alphanumeric, multilingual control panel with startup assistant feature
- Large power terminals allowing the use of a wide range of cable sizes

Options for ACS800-02
Built-in options:
- Brake chopper
- EMC filter for 1st environment, restricted distribution according to EN 61800-3 (category C2) frame size R7
- EMC filter for 2nd environment, unrestricted distribution according to EN 61800-3 (category C3)
- Analog and digital I/O extension modules
- Fieldbus modules
- Pulse encoder interface module
- Common mode filters for motor protection

External options:
- Brake resistor
- Output filters

Ratings, types and voltages
ACS800-02

ACS800	–	02	–	XXXX	–	2 3 5 7	+	XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	W	m³/h		
U_N = 230 V (Ranges 208 to 240 V). The power ratings are valid at nominal voltage 230 V.											
214	326	55	211	55	170	45	71	2900	540	ACS800-02-0080-2	R7
253	404	75	248	75	202	55	71	3450	540	ACS800-02-0100-2	R7
295	432	90	290	90	240 [1]	55	71	4050	540	ACS800-02-0120-2	R7
405	588	110	396	110	316	90	72	5300	1220	ACS800-02-0140-2	R8
447	588	132	440	132	340	90	72	6100	1220	ACS800-02-0170-2	R8
528	588	160	516	160	370	110	72	6700	1220	ACS800-02-0210-2	R8
613	840	160	598	160	480	132	72	7600	1220	ACS800-02-0230-2	R8
693	1017	200	679	200	590 [2]	160	72	7850	1220	ACS800-02-0260-2	R8
720	1017	200	704	200	635 [3]	200	72	8300	1220	ACS800-02-0300-2	R8
U_N = 400 V (Ranges 380 to 415 V). The power ratings are valid at nominal voltage 400 V.											
206	326	110	202	110	163	90	71	3000	540	ACS800-02-0140-3	R7
248	404	132	243	132	202	110	71	3650	540	ACS800-02-0170-3	R7
289	432	160	284	160	240 [4]	132	71	4300	540	ACS800-02-0210-3	R7
445	588	200	440	200	340	160	72	6600	1220	ACS800-02-0260-3	R8
521	588	250	516	250	370	200	72	7150	1220	ACS800-02-0320-3	R8
602	840	315	590	315	477	250	72	8100	1220	ACS800-02-0400-3	R8
693	1017	355	679	355	590 [2]	315	72	8650	1220	ACS800-02-0440-3	R8
720	1017	400	704	400	635 [3]	355	72	9100	1220	ACS800-02-0490-3	R8
U_N = 500 V (Ranges 380 to 500 V). The power ratings are valid at nominal voltage 500 V.											
196	326	132	192	132	162	110	71	3000	540	ACS800-02-0170-5	R7
245	384	160	240	160	192	132	71	3800	540	ACS800-02-0210-5	R7
289	432	200	284	200	224	160	71	4500	540	ACS800-02-0260-5	R7
440	588	250	435	250	340	200	72	6850	1220	ACS800-02-0320-5	R8
515	588	315	510	315	370	250	72	7800	1220	ACS800-02-0400-5	R8
550	840	355	545	355	490	315	72	7600	1220	ACS800-02-0440-5	R8
602	840	400	590	400	515 [2]	355	72	8100	1220	ACS800-02-0490-5	R8
684	1017	450	670	450	590 [2]	400	72	9100	1220	ACS800-02-0550-5	R8
718	1017	500	704	500	632 [3]	450	72	9700	1220	ACS800-02-0610-5	R8
U_N = 690 V (Ranges 525 to 690 V). The power ratings are valid at nominal voltage 690 V.											
134	190	132	125	110	95	90	71	2800	540	ACS800-02-0140-7	R7
166	263	160	155	132	131	110	71	3550	540	ACS800-02-0170-7	R7
166/203 [5]	294	160	165/195 [5]	160	147	132	71	4250	540	ACS800-02-0210-7	R7
175/230 [5]	326	160/200 [5]	175/212 [5]	160/200 [5]	163	160	71	4800	540	ACS800-02-0260-7	R7
315	433	315	290	250	216	200	72	6150	1220	ACS800-02-0320-7	R8
353	548	355	344	315	274	250	72	6650	1220	ACS800-02-0400-7	R8
396	656	400	387	355	328	315	72	7400	1220	ACS800-02-0440-7	R8
445	775	450	426	400	387	355	72	8450	1220	ACS800-02-0490-7	R8
488	853	500	482	450	426	400	72	8300	1220	ACS800-02-0550-7	R8
560	964	560	537	500	482	450	72	9750	1220	ACS800-02-0610-7	R8

Enclosure
Degree of protection: IP21 (Standard)
Paint color: NCS 1502-Y (RAL 9002/PMS 420C)

Dimensions

Frame size	IP21			
	Height mm	Width mm	Depth mm	Weight kg
R7	1507	250 [A]	524 [A]	110
R8	2024	347 [A]	622 [A]	240

Width = Width of the standard unit

[A] The dimensions apply to bookshelf mounting. In flat type mounting the width and depth change places.

Notes:
[1] 50% overload available if T_{amb} < 35 °C. If T_{amb} = 40 °C, max overload is 45%.
[2] 50% overload available if T_{amb} < 30 °C. If T_{amb} = 40 °C, max overload is 40%.
[3] 50% overload available if T_{amb} < 20 °C. If T_{amb} = 40 °C, max overload is 30%.
[4] 50% overload available if T_{amb} < 25 °C. If T_{amb} = 40 °C, max overload is 37%.
[5] Higher value available if output frequency is above 41 Hz.

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 40 °C.
I_{max}	Maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd}.
Typical ratings: No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous current allowing 110% I_N for 1 min / 5 min at 40 °C.
P_N	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 current ratings are the same regardless of the supply voltage within one voltage range.

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

Cabinet-built drives
ACS800-07, up to 2800 kW

Customized solutions
The ACS800-07 is built in a robust cabinet designed for heavy industrial applications.

The ACS800-07 offers a wide variety of standardized configurations to adapt to different application requirements, from line contactor to prevention of unexpected motor start. The drive comes with ATEX-certified thermal motor protection as option, ensuring safe disconnection when used with Ex-motors in potentially explosive atmospheres.

If your application requires more, ABB's application engineering services can add special features to the standard product such as an additional cabinet for customer specific devices to ensure exact suitability for the application.

Smart module concept
The drives up to 560 kW are based on a compact single module including rectifier and inverter. Larger drives consist of separate rectifier and inverter modules, which have plug-in power connectors providing easy maintenance and redundancy with parallel connected units. If one module becomes defective, the drive can continue running with reduced power after disconnecting the faulty module. The rectifier module of the larger drives provides 6- or 12-pulse operation.

Extensive range of features
The ACS800-07 has an extensive range of built-in features and options. Typical option choices include extended I/O and fieldbus options, line contactor, EMC filtering, common mode filtering and du/dt (voltage rise) filtering, all mountable within the single cabinet.

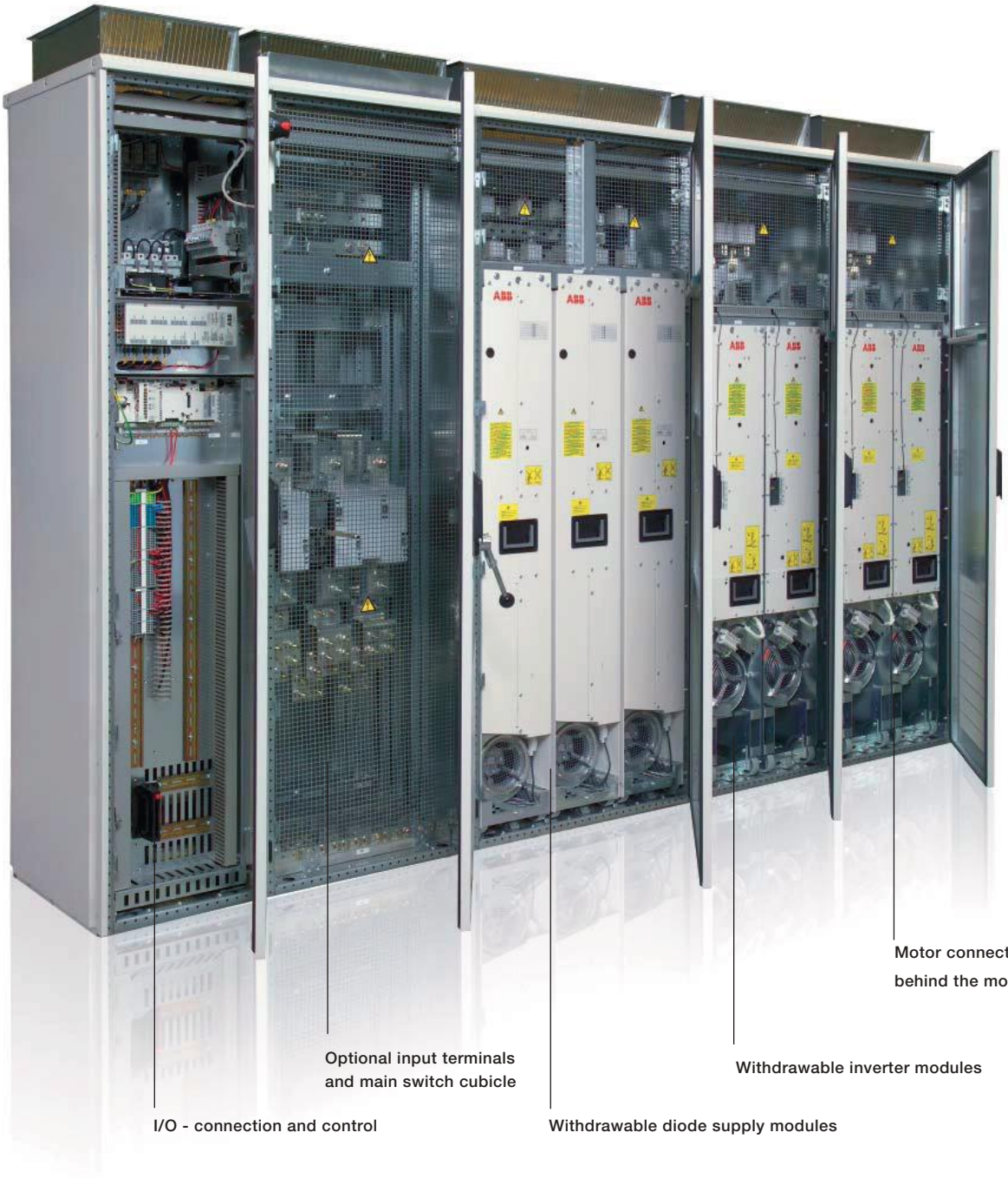
Main standard features
- Compact design
- IP21 protection degree
- Built-in harmonic filtering choke
- Du/dt filters (in frame sizes n×R8i)
- Common mode filters for motor protection (in frame sizes n×R8i)
- Main switch with fuses (in frame sizes R5-R8)
- Main switch (in frame sizes n×R8i)
- Extensive, programmable I/O
- Inputs galvanically isolated
- 6- or 12-pulse operation (in frame sizes n×R8i)
- Long lifetime cooling fan and capacitors
- I/O and fieldbus extension slots inside
- Alphanumeric multilingual control panel with startup assistant feature
- EMC filter for 2nd environment, unrestricted distribution according to EN 61800-3 (in frame sizes n×R8i) (category C3)

Accessories for ACS800-07
- Analog and digital I/O extension modules
- ATEX approved motor protection
- Brake chopper and resistor
- Cabinet heater
- Common mode filters for motor protection (in frame sizes R7-R8)
- Customer terminal block
- du/dt filters (in frame sizes R5-R8)
- Earth fault monitoring for unearthed network
- EMC filter for 1st environment, restricted distribution according to EN 61800-3 (category C2)
- EMC filter for 2nd environment, unrestricted distribution according to EN 61800-3 (in frame sizes R5-R8) (category C3)
- Fieldbus modules
- IP22, IP42, IP54 or IP54R protection degrees
- Line contactor with emergency stop push button
- Line fuses with main switch and input terminal cubicle (in frame size n×R8i)
- Marine construction
- Output for fan motor
- Pulse encoder interface module
- Safe torque-off (STO)
- Safely-limited speed (SLS)
- Top entry and exit of cables
- 1 or 2 thermistor relays
- 3, 5 or 8 Pt100 relays
- Emergency stop categories 0 or 1
- UL or CSA certified design

Plus tailor made options through ABB's application engineering.

ACS800-07-2320-7 1900 kW drive

Diode supply and inverter units of n×R8i drives are on wheels providing quick and easy maintenance.



Ratings, types and voltages
ACS800-07

ACS800 – 07 – XXXX – 3 / 5 + XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
$I_{cont.\ max}$ A	I_{max} A	$P_{cont.\ max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	kW	m³/h		
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V.											
145	170	75	141	75	100	45	65	1.44	405	ACS800-07-0075-3	R5
166	202	90	155	75	115	55	63	1.94	405	ACS800-07-0100-3	R6
202	282	110	184	90	141	75	63	2.31	405	ACS800-07-0120-3	R6
225	326	110	220	110	163	90	65	2.81	405	ACS800-07-0135-3	R6
260	326	132	254	132	215	110	65	3.26	405	ACS800-07-0165-3	R6
290	351	160	285	160	234	132	65	4.20	405	ACS800-07-0205-3	R6
445	588	200	440	200	340	160	72	6.60	1220	ACS800-07-0260-3	R8
521	588	250	516	250	370	200	72	7.15	1220	ACS800-07-0320-3	R8
602	840	315	590	315	477	250	72	8.10	1220	ACS800-07-0400-3	R8
693	1017	355	679	355	590 [1]	315	72	8.65	1220	ACS800-07-0440-3	R8
720	1017	400	704	400	635 [2]	355	72	9.00	1220	ACS800-07-0490-3	R8
879	1315	500	844	500	657	400	73	13.0	3120	ACS800-07-0610-3	1×D4 + 2×R8i
1111	1521	630	1067	630	831	450	74	17.2	3840	ACS800-07-0770-3	2×D4 + 2×R8i
1255	1877	710	1205	710	939	500	74	18.5	3840	ACS800-07-0870-3	2×D4 + 2×R8i
1452	1988	800	1394	800	1086	630	74	23.9	3840	ACS800-07-1030-3	2×D4 + 2×R8i
1770	2648	1000	1699	1000	1324	710	75	27.5	5040	ACS800-07-1230-3	2×D4 + 3×R8i
2156	2951	1200	2070	1200	1613	900	76	35.4	5760	ACS800-07-1540-3	3×D4 + 3×R8i
2663	3894	1450	2556	1450	1992	1120	76	42.7	6960	ACS800-07-1850-3	3×D4 + 4×R8i
U_N = 500 V (Range 380 to 500 V). The power ratings are valid at nominal voltage 500 V.											
145	170	90	141	90	100	55	65	2.15	405	ACS800-07-0105-5	R5
157	202	90	145	90	113	75	63	2.31	405	ACS800-07-0120-5	R6
180	282	110	163	110	141	90	63	2.81	405	ACS800-07-0140-5	R6
225	326	132	220	132	163	110	65	3.26	405	ACS800-07-0165-5	R6
260	326	160	254	160	215	132	65	3.80	405	ACS800-07-0205-5	R6
290	351	200	285	200	234	160	65	4.50	405	ACS800-07-0255-5	R6
440	588	250	435	250	340	200	72	6.85	1220	ACS800-07-0320-5	R8
515	588	315	510	315	370	250	72	7.80	1220	ACS800-07-0400-5	R8
550	840	355	545	355	490	315	72	7.60	1220	ACS800-07-0440-5	R8
602	840	400	590	400	515 [1]	355	72	8.10	1220	ACS800-07-0490-5	R8
684	1017	450	670	450	590 [1]	400	72	9.10	1220	ACS800-07-0550-5	R8
718	1017	500	704	500	632 [2]	450	72	9.70	1220	ACS800-07-0610-5	R8
883	1321	630	848	630	660	500	73	14.0	3120	ACS800-07-0760-5	1×D4 + 2×R8i
1050	1524	710	1008	710	785	560	74	17.2	3840	ACS800-07-0910-5	2×D4 + 2×R8i
1258	1882	900	1208	900	941	630	74	19.9	3840	ACS800-07-1090-5	2×D4 + 2×R8i
1372	1991	1000	1317	1000	1026	710	74	23.8	3840	ACS800-07-1210-5	2×D4 + 2×R8i
1775	2655	1250	1704	1200	1328	900	75	29.4	5040	ACS800-07-1540-5	2×D4 + 3×R8i
2037	2956	1450	1956	1400	1524	1120	76	35.0	5760	ACS800-07-1820-5	3×D4 + 3×R8i
2670	3901	1900	2563	1850	1997	1400	76	45.4	6960	ACS800-07-2310-5	3×D4 + 4×R8i

Ratings, types and voltages
ACS800-07

ACS800 – 07 – XXXX – 7 + XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
$I_{cont.\ max}$ A	I_{max} A	$P_{cont.\ max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	kW	m³/h		
U_N = 690 V (Range 525 to 690 V). The power ratings are valid at nominal voltage 690 V.											
79	104	75	73	55	54	45	63	1.22	405	ACS800-07-0070-7	R6
93	124	90	86	75	62	55	63	1.65	405	ACS800-07-0100-7	R6
113	172	110	108	90	86	75	65	1.96	405	ACS800-07-0120-7	R6
134	190	132	125	110	95	90	65	2.66	405	ACS800-07-0145-7	R6
166	245	160	155	132	131	110	65	3.47	405	ACS800-07-0175-7	R6
190	245	160	180	160	147	132	65	4.18	405	ACS800-07-0205-7	R6
175/230 [3]	326	160/200 [3]	175/212 [3]	160/200 [3]	163	160	71	4.80	540	ACS800-07-0260-7	R7
315	433	315	290	250	216	200	72	6.15	1220	ACS800-07-0320-7	R8
353	548	355	344	315	274	250	72	6.65	1220	ACS800-07-0400-7	R8
396	656	400	387	355	328	315	72	7.40	1220	ACS800-07-0440-7	R8
445	775	450	426	400	387	355	72	8.45	1220	ACS800-07-0490-7	R8
488	853	500	482	450	426	400	72	8.30	1220	ACS800-07-0550-7	R8
560	964	560	537	500	482	450	72	9.75	1220	ACS800-07-0610-7	R8
628	939	630	603	630	470	500	73	13.9	3120	ACS800-07-0750-7	1×D4 + 2×R8i
729	1091	710	700	710	545	560	73	17.1	3120	ACS800-07-0870-7	1×D4 + 2×R8i
885	1324	800	850	800	662	630	73	18.4	3120	ACS800-07-1060-7	1×D4 + 2×R8i
953	1426	900	915	900	713	710	74	20.8	3840	ACS800-07-1160-7	2×D4 + 2×R8i
1258	1882	1200	1208	1200	941	900	75	27.0	5040	ACS800-07-1500-7	2×D4 + 3×R8i
1414	2115	1400	1357	1400	1058	1000	75	32.5	5040	ACS800-07-1740-7	2×D4 + 3×R8i
1774	2654	1700	1703	1700	1327	1250	76	40.1	6240	ACS800-07-2120-7	2×D4 + 4×R8i
1866	2792	1900	1791	1800	1396	1400	76	43.3	6960	ACS800-07-2320-7	3×D4 + 4×R8i
2321	3472	2300	2228	2200	1736	1600	77	51.5	8160	ACS800-07-2900-7	3×D4 + 5×R8i
2665	3987	2600	2558	2500	1993	1900	78	58.0	9360	ACS800-07-3190-7	3×D4 + 6×R8i
2770	4144	2800	2659	2700	2072	2100	78	63.6	10080	ACS800-07-3490-7	4×D4 + 6×R8i

Enclosure
Degree of protection:
IP21 (Standard)
IP22, IP42, IP54, IP54R (Optional)
Paint color: Light beige RAL 7035 semi-gloss

Notes:
[1] 50% overload available if T_{amb} < 30 °C. If T_{amb} = 40 °C, max overload is 40%.
[2] 50% overload available if T_{amb} < 20 °C. If T_{amb} = 40 °C, max overload is 30%.
[3] Higher value available if output frequency is above 41 Hz.

Dimensions

Frame size	Height IP21/22/42 mm	Height IP54 mm	Width mm	6-pulse width with switch and fuses mm	12-pulse width with switch and fuses mm	Depth [B] mm	Depth top exit [B] mm	Weight kg	Weight with switch and fuses kg
R5 and R6	2130	2315	-	430	-	646	646	-	300
R7	2130	2315	-	830	-	646	646	-	400
R8	2130	2315	-	830 [A]	-	646	646	-	500
1×D4 + 2×R8i	2130	2315	1330	1730	1830	646	776 [C]	890	1100
2×D4 + 2×R8i	2130	2315	1630	2130	2130	646	776 [C]	1200	1410
2×D4 + 3×R8i	2130	2315	1830	2330	2330	646	776 [C]	1350	1560
2×D4 + 4×R8i	2130	2315	2230	2730	2730	646	776 [C]	1680	1890
3×D4 + 3×R8i	2130	2315	2030	2630	2630	646	776 [C]	1540	1800
3×D4 + 4×R8i	2130	2315	2430	3030	3030	646	776 [C]	1870	2130
3×D4 + 5×R8i	2130	2315	2630	3230	3230	646	776 [C]	2020	2280
3×D4 + 6×R8i	2130	2315	2830	3430	3430	646	776 [C]	2170	2430
4×D4 + 6×R8i	2130	2315	3230	3830	3830	646	776 [C]	2520	2940

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 40 °C.
I_{max}	Maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd}.
Typical ratings: No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous current allowing 110% I_N for 1 min / 5 min at 40 °C.
P_N	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 current ratings are the same regardless of the supply voltage within one voltage range.

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

For sine filter selections and ratings, contact ABB.

[A] 1230 mm if equipped with 1st environment EMC filter.
[B] The depth without the handle.
[C] The depth is 646 mm if common motor terminal is used.

Liquid-cooled drives
ACS800-07LC, 200 to 5600 kW

Ultimate solution for high power applications

The liquid-cooled ACS800 frequency converter offers robust design for various applications. The compact size with a totally enclosed cabinet is optimized for harsh environmental conditions. The liquid-cooled ACS800 product series provides advanced reliability for medium and high power applications.

The ACS800-07LC single drive is available from 200 kW up to 5600 kW at 380 to 690 V supply voltages.

Advanced liquid cooling

The ACS800 liquid-cooled drive utilizes direct liquid cooling which makes the converter extremely compact and silent. Liquid cooling reduces the need for high-power filtered air-cooling in the installation rooms. Along with the high efficiency, direct liquid cooling offers low noise and easy heat transfer without air filtering.

Customer specific design

The modular hardware design and advanced software features of the liquid-cooled single drive enable the most sophisticated drive solutions for both induction and permanent magnet motors. Our customized solutions provide the optimum customer benefits. The design meets the international standards and marine classification requirements. ABB´s extensive application and product know-how is at your service.

Intelligence and high availability

The ABB ACS800 liquid-cooled series has a number of unique features as standard, and which are not available in previous generations of ABB drives. These include:

– Built-in redundancy through parallel connected modules - each module is a complete three-phase inverter
– Ability to run with partial load even when one of the modules is not operating - enabling higher drive availability and greater process uptime.

With ABB drives, you get more than the most reliable equipment and systems. ABB drives are backed by our full service and support network, which covers field service and training as well as spare parts. This ensures reliable and economic operation under all conditions

“Compact and easy” – are the words to describe the entire ACS800 liquid-cooled drive range. They demonstrate how technology enables ABB to add more and more features into a shrinking space – and still give the benefits of easy installation, access and use.

Ratings, types and voltages
ACS800-07LC

ACS800 – 07LC – XXXX – 3 / 5 / 7 + XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Dissipation to liquid*	Liquid Qty	Mass flow	Type designation	Frame size
$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	kW	l	l/min		
U_N = 400 V (Ranges 380 to 415 V). The power ratings are valid at nominal voltage 400 V.												
563	674	315	540	250	421	200	55	8.7	6.2	32	ACS800-07LC-0390-3	1×D3 + 1×R8i
678	837	355	651	355	507	250	55	10	6.2	32	ACS800-07LC-0470-3	1×D3 + 1×R8i
889	1037	500	853	400	665	355	55	14	6.2	32	ACS800-07LC-0620-3	1×D3 + 1×R8i
1103	1279	630	1059	560	825	450	56	16	8.4	45	ACS800-07LC-0760-3	1×D4 + 2×R8i
1329	1590	710	1276	710	994	500	56	21	8.4	45	ACS800-07LC-0920-3	1×D4 + 2×R8i
1742	1994	900	1673	900	1303	710	56	26	8.4	45	ACS800-07LC-1210-3	1×D4 + 2×R8i
1973	2347	1120	1894	1120	1476	900	58	28	14.4	77	ACS800-07LC-1370-3	2×D4 + 3×R8i
2587	2941	1400	2484	1400	1935	1120	58	37	14.4	77	ACS800-07LC-1790-3	2×D4 + 3×R8i
3414	3906	2000	3277	2000	2553	1400	58	51	16.8	90	ACS800-07LC-2370-3	2×D4 + 4×R8i
4245	4858	2500	4075	2240	3175	1800	59	62	22.8	122	ACS800-07LC-2940-3	3×D4 + 5×R8i
5067	5799	2800	4865	2800	3790	2000	60	76	24.8	135	ACS800-07LC-3510-3	3×D4 + 6×R8i
U_N = 500 V (Ranges 380 to 500 V). The power ratings are valid at nominal voltage 500 V.												
546	673	355	524	355	408	250	55	8.7	6.2	32	ACS800-07LC-0470-5	1×D3 + 1×R8i
630	838	400	605	400	471	315	55	10	6.2	32	ACS800-07LC-0550-5	1×D3 + 1×R8i
840	1042	560	806	560	568	400	55	13	6.2	32	ACS800-07LC-0730-5	1×D3 + 1×R8i
1070	1280	710	1027	710	800	560	56	16	8.4	45	ACS800-07LC-0930-5	1×D4 + 2×R8i
1235	1589	900	1185	900	924	630	56	19	8.4	45	ACS800-07LC-1070-5	1×D4 + 2×R8i
1646	1996	1120	1581	1120	1232	710	56	25	8.4	45	ACS800-07LC-1430-5	1×D4 + 2×R8i
1833	2344	1250	1760	1250	1371	900	57	29	10.5	58	ACS800-07LC-1590-5	1×D4 + 3×R8i
2444	2943	1600	2347	1600	1828	1250	58	36	14.4	77	ACS800-07LC-2120-5	2×D4 + 3×R8i
3226	3885	2240	3097	2240	2413	1600	58	49	16.8	90	ACS800-07LC-2790-5	2×D4 + 4×R8i
4011	4830	2800	3851	2800	3000	2000	59	60	22.8	122	ACS800-07LC-3470-5	3×D4 + 5×R8i
4788	5801	3360	4596	3200	3581	2500	60	73	24.8	135	ACS800-07LC-4150-5	3×D4 + 6×R8i
U_N = 600 V (Ranges 525 to 690 V). The power ratings are valid at nominal voltage 690 V.												
583	872	560	560	500	436	400	55	12	6.2	32	ACS800-07LC-0700-7	1×D3 + 1×R8i
790	1182	710	759	710	591	560	56	17	8.3	45	ACS800-07LC-0940-7	1×D3 + 2×R8i
898	1344	900	863	900	672	630	56	19	8.3	45	ACS800-07LC-1070-7	1×D3 + 2×R8i
1143	1710	1120	1097	1120	855	710	56	22	8.4	45	ACS800-07LC-1370-7	1×D4 + 2×R8i
1334	1996	1250	1281	1250	998	900	57	28	10.5	58	ACS800-07LC-1590-7	1×D4 + 3×R8i
1697	2538	1600	1629	1600	1269	1250	57	34	10.5	58	ACS800-07LC-2030-7	1×D4 + 3×R8i
2239	3350	2240	2150	2000	1675	1600	58	44	16.8	90	ACS800-07LC-2680-7	2×D4 + 4×R8i
2785	4166	2800	2673	2500	2083	2000	58	55	18.9	103	ACS800-07LC-3330-7	2×D4 + 5×R8i
3324	4974	3200	3191	3200	2487	2500	59	66	21	116	ACS800-07LC-3970-7	2×D4 + 6×R8i
3878	5802	3750	3723	3600	2901	2800	60	76	27.3	148	ACS800-07LC-4630-7	3×D4 + 7×R8i
4432	6630	4480	4255	4200	3315	3200	61	87	29.4	161	ACS800-07LC-5300-7	3×D4 + 8×R8i
4986	7460	5000	4787	4800	3730	3600	62	99	31.5	174	ACS800-07LC-5960-7	3×D4 + 9×R8i
5540	8288	5600	5319	5300	4144	4200	62	112	33.9	187	ACS800-07LC-6620-7	3×D4 + 10×R8i

* 98% of heat losses are carried out with liquid

Frame size	Height mm	Width w/o LC unit mm	Width with LC unit mm	Depth mm	Weight kg
1×D3 + 1×R8i	2003 [1) 2)]	730	1030	644	700
1×D3 + 2×R8i	2003 [1) 2)]	930	1230	644	830
1×D4 + 2×R8i	2003 [1) 2)]	930	1230	644	870
1×D4 + 3×R8i	2003 [1) 2)]	1130	1430	644	1040
2×D4 + 3×R8i	2003 [1) 2)]	1530	2130	644	1440
2×D4 + 4×R8i	2003 [1) 2)]	1830	2430	644	1660
2×D4 + 5×R8i	2003 [1) 2)]	2030	2630	644	1910
2×D4 + 6×R8i	2003 [1) 2)]	2230	2830	644	2080
3×D4 + 5×R8i	2003 [1) 2)]	2430	3030	644	1910
3×D4 + 6×R8i	2003 [1) 2)]	2630	3230	644	2080
3×D4 + 7×R8i	2003 [1) 2)]	2930	3530	644	2780
3×D4 + 8×R8i	2003 [1) 2)]	3130	3730	644	2950
3×D4 + 9×R8i	2003 [1) 2)]	3330	3930	644	3120
3×D4 + 10×R8i	2003 [1) 2)]	3630	4230	644	3400

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 42 °C converter circuit liquid temperature.
I_{max}	Maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd}.
Overload use	
I_N	Continuous base current allowing 110% overload for 1 minute/5 minutes
I_{hd}	Continuous base current allowing 150% overload for 1 minute/5 minutes

The current ratings are the same regardless of the supply voltage within one voltage range.

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

[1)] Total height with marine supports is 2088 mm.
[2)] Pressure release lids require an additional 400 mm.

Liquid cooling unit (optional)

Nominal ratings				Noise level	Losses			Cooling media		Type designation	Frame size
Max dissipated losses kW	Internal massflow at 120 kPa l/min	External massflow l/min	External pressure loss kPa	dB(A)	Ploss kW	Ploss coolant kW	Ploss air kW	Internal liquid Qty l	External liquid Qty l		
Range 380 to 690 V											
70	100	103	125	51	0.4	0.3	0.1	8.0	3.0	ACS800-1007LC-0070	70
195	300	380	130	53	0.9	0.7	0.2	28.0	8.0	ACS800-1007LC-0195	195

Frame size	Height mm	Depth mm	Width [1)] mm	Weight kg
70	2003	644	300/-	200
195	2003	644	600/630	400

[1)] The first values for line-up connected unit and the latter values for stand alone unit.

Cabinet-built regenerative drives
ACS800-17, up to 2500 kW

Complete regenerative drive
The ACS800-17 offers you a complete regenerative drive in a single, compact cabinet-built package. The drive includes everything that is needed for regenerative operation, including line filter. The active supply unit allows full power flow both in motoring and generating modes.

Energy savings
Compared with other braking methods such as mechanical and resistor braking, the energy savings can be significant with the ACS800-17. The braking energy is returned to network, not wasted as heat. Handling of waste heat may also be a problem if braking power is significant. As no external braking devices are needed with the ACS800-17, installation work is simpler and the space requirement for installation is less.

High performance
The ACS800-17 is especially suitable for demanding applications. Transition between motoring and generating is fast due to the DTC control method. The active supply unit is able to boost output voltage, which guarantees full motor voltage even when the supply voltage is below nominal.

The active supply unit combined with the DTC control can even compensate for fast variations in line voltage. There is no risk of fuse blow or component damage due to voltage drops in the network.

Extensive range of features
Adaptation to different application requirements is possible by selecting from a wide range of standardized configurations. The cabinet-built drive series enables having a significant amount of features and accessories as built-in options.

Main standard features
- Compact design
- IP21 protection degree
- LCL line filter inside
- EMC filter for 2nd environment, unrestricted distribution according to EN 61800-3 (option in frame size R6) (category C3)
- Main switch with aR fuses (in frame sizes R6-R8i)
- Line contactor (in frame sizes R7i-R8i, option in frame size R6)
- Withdrawable air circuit breaker (in frame size n×R8i)
- Common mode filters for motor protection (in frame sizes R7i-n×R8i)
- du/dt filters (in frame size n×R8i)
- Coated boards
- Extensive, programmable I/O
- Long lifetime cooling fan and capacitors
- Inputs galvanically isolated
- I/O and fieldbus extension slots inside
- Alphanumeric multilingual control panel with startup assistant feature

Accessories for the ACS800-17
- Analogue and digital I/O extension modules
- ATEX approved motor protection
- Cabinet heater
- Customer terminal block
- du/dt filters (in frame sizes R6-R8i)
- Earth fault monitoring for unearthed network
- EMC filter for 1st environment, restricted distribution according to EN 61800-3 (category C2)
- Fieldbus modules
- IP22, IP42, IP54 or IP54R protection degrees
- Marine construction
- Output for motor fan
- Pulse encoder interface module
- Safe torque-off (STO)
- Safely-limited speed (SLS)
- Top entry and exit of cables
- 1 or 2 thermistor relays
- 3, 5 or 8 Pt100 relays
- Emergency stop categories 0 or 1
- UL or CSA certified design

Plus tailor made accessories through ABB's application engineering.

Ratings, types and voltages
ACS800-17

ACS800 – 17 – XXXX – 3 / 5 + XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
$I_{cont.\ max}$ A	I_{max} A	$P_{cont.\ max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	kW	m³/h		
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V.											
120	168	55	114	55	88	45	73	1.8	500	ACS800-17-0060-3	R6
150	234	75	142	75	117	55	73	2.4	500	ACS800-17-0070-3	R6
165	264	90	157	75	132	75	73	2.8	500	ACS800-17-0100-3	R6
202	293	110	194	90	151	75	74	6	1300	ACS800-17-0140-3	R7i
250	363	132	240	132	187	90	74	7	1300	ACS800-17-0170-3	R7i
292	400	160	280	160	218	110	75	7	3160	ACS800-17-0210-3	R8i
370	506	200	355	200	277	132	75	9	3160	ACS800-17-0260-3	R8i
469	642	250	450	250	351	200	75	11	3160	ACS800-17-0320-3	R8i
565	773	315	542	315	423	250	75	14	3160	ACS800-17-0390-3	R8i
704	963	400	675	355	526	250	75	19	3160	ACS800-17-0490-3	R8i
919	1258	500	882	500	688	355	77	22	6400	ACS800-17-0640-3	2×R8i
1111	1521	630	1067	630	831	450	77	28	6400	ACS800-17-0770-3	2×R8i
1379	1888	800	1324	710	1031	560	77	36	6400	ACS800-17-0960-3	2×R8i
1535	2102	900	1474	800	1149	630	78	39	10240	ACS800-17-1070-3	3×R8i
1978	2707	1200	1899	1100	1479	800	78	51	10240	ACS800-17-1370-3	3×R8i
2610	3573	1600	2506	1400	1953	1100	79	67	12800	ACS800-17-1810-3	4×R8i
U_N = 500 V (Range 380 to 500 V). The power ratings are valid at nominal voltage 500 V.											
120	168	75	114	75	88	55	73	2.4	500	ACS800-17-0070-5	R6
139	234	90	132	90	114	75	73	2.8	500	ACS800-17-0100-5	R6
156	264	110	148 [1]	90	125	75	73	3.4	500	ACS800-17-0120-5	R6
200	291	132	192	132	150	90	74	6	1300	ACS800-17-0170-5	R7i
245	356	160	235 [2]	160	183	110	74	8	1300	ACS800-17-0210-5	R7i
302	438	200	289 [3]	200	226	132	75	8	3160	ACS800-17-0260-5	R8i
365	530	250	350 [4]	250	273	160	75	10	3160	ACS800-17-0320-5	R8i
455	660	315	437	315	340	200	75	12	3160	ACS800-17-0400-5	R8i
525	762	355	504	355	393	250	75	14	3160	ACS800-17-0460-5	R8i
595	863	400	571	400	445	315	75	16	3160	ACS800-17-0510-5	R8i
670	972	500	643	450	501	315	75	19	3160	ACS800-17-0580-5	R8i
892	1294	630	856	630	667	450	77	24	6400	ACS800-17-0780-5	2×R8i
1005	1458	710	965	630	752	500	77	28	6400	ACS800-17-0870-5	2×R8i
1313	1906	900	1261	900	982	710	77	36	6400	ACS800-17-1140-5	2×R8i
1528	2217	1120	1467	1120	1143	800	78	41	10240	ACS800-17-1330-5	3×R8i
1884	2734	1400	1809	1300	1409	1000	78	52	10240	ACS800-17-1640-5	3×R8i
2486	3608	1800	2387	1700	1860	1300	79	68	12800	ACS800-17-2160-5	4×R8i

Notes:
[1] 156 A is allowed at 460 V.
[2] 240 A is allowed at 460 V.
[3] 302 A is allowed at 460 V.
[4] 361 A is allowed at 460 V.

Enclosure
Degree of protection:
IP21 (Standard)
IP22, IP42, IP54, IP54R (Optional)
Paint color: Light beige RAL 7035 semi-gloss

Dimensions

Frame size	Height IP21/22/42 mm	Height IP54 mm	Width mm	Depth [E] mm	Depth top exit [E] mm	Weight kg
R6	2130	2315	430	646	646	250
R7i	2130	2315	630 [A]	646	646	400
R8i	2130	2315	1230 [B]	646	646	950
2×R8i	2130	2315	2430 [C]	646	776 [F]	2000
3×R8i	2130	2315	3230	646	776 [F]	3060
4×R8i	2130	2315	3830 [D]	646	776 [F]	3600
5×R8i	2130	2315	5130 [D]	646	776 [F]	4780
6×R8i	2130	2315	5330 [D]	646	776 [F]	4930

[A] 930 mm if equipped with 1st environment (C2) or with du/dt filter.
[B] 1530 mm if equipped with 1st environment filter.
[C] 2730 mm if equipped with 1st environment filter (only types 0640-3/0770-3/0780-5/0870-5).
[D] Add 300 mm if top entry.
[E] The depth without the handle.
[F] The depth is 646 mm if common motor terminal is used.

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 40 °C.
I_{max}	Maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd}.
Typical ratings: No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous current allowing 110% I_N for 1 min / 5 min at 40 °C.
P_N	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 current ratings are the same regardless of the supply voltage within one voltage range.

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

For sine filter selections and ratings, contact ABB.

Ratings, types and voltages
ACS800-17

ACS800 – 17 – XXXX – 7 + XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
$I_{cont.\ max}$ A	I_{max} A	$P_{cont.\ max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	kW	m³/h		
U_N = 690 V (Range 525 to 690 V). The power ratings are valid at nominal voltage 690 V.											
57 [1]	86	55	54	45	43	37	73	1.8	500	ACS800-17-0060-7	R6
79	120	75	75	55	60	55	73	2.4	500	ACS800-17-0070-7	R6
93 [2]	142	90	88	75	71	55	73	2.8	500	ACS800-17-0100-7	R6
132	192	110	127	110	99	90	74	7	1300	ACS800-17-0160-7	R7i
150	218	132	144	132	112	90	74	8	1300	ACS800-17-0200-7	R7i
201	301	200	193	160	150	132	75	11	3160	ACS800-17-0260-7	R8i
279	417	250	268	250	209	200	75	12	3160	ACS800-17-0320-7	R8i
335	502	315	322	250	251	200	75	16	3160	ACS800-17-0400-7	R8i
382	571	355	367	355	286	270	75	17	3160	ACS800-17-0440-7	R8i
447	668	450	429	400	334	315	75	18	3160	ACS800-17-0540-7	R8i
659	985	630	632	630	493	450	77	32	6400	ACS800-17-0790-7	2×R8i
729	1091	710	700	710	545	500	77	33	6400	ACS800-17-0870-7	2×R8i
876	1310	900	840	800	655	630	77	36	6400	ACS800-17-1050-7	2×R8i
1112	1663	1120	1067	1120	831	800	78	48	10240	ACS800-17-1330-7	3×R8i
1256	1879	1250	1206	1200	940	900	78	51	10240	ACS800-17-1510-7	3×R8i
1657	2480	1700	1591	1600	1240	1200	79	67	12800	ACS800-17-1980-7	4×R8i
2321	3472	2300	2228	2300	1736	1600	79	94	17920	ACS800-17-2780-7	5×R8i
2460	3680	2500	2362	2400	1840	1800	79	99	19200	ACS800-17-2940-7	6×R8i

Notes:
[1] 62 A is allowed at 575 V.
[2] 99 A is allowed at 575 V.

Enclosure
Degree of protection:
IP21 (Standard)
IP22, IP42, IP54, IP54R (Optional)
Paint color: Light beige RAL 7035 semi-gloss

Dimensions

Frame size	Height IP21/22/42 mm	Height IP54 mm	Width mm	Depth [E] mm	Depth top exit [E] mm	Weight kg
R6	2130	2315	430	646	646	250
R7i	2130	2315	630 [A]	646	646	400
R8i	2130	2315	1230 [B]	646	646	950
2×R8i	2130	2315	2430 [C]	646	776 [F]	2000
3×R8i	2130	2315	3230	646	776 [F]	3060
4×R8i	2130	2315	3830 [D]	646	776 [F]	3600
5×R8i	2130	2315	5130 [D]	646	776 [F]	4780
6×R8i	2130	2315	5330 [D]	646	776 [F]	4930

[A] 930 mm if equipped with 1st environment (C2) or with du/dt filter in marine version.
[B] 1530 mm if equipped with 1st environment filter and common motor terminal.
[C] 2730 mm if equipped with 1st environment filter (only types 0640-3/0770-3/0780-5/0870-5).
[D] Add 300 mm if top entry.
[E] The depth without the handle.
[F] The depth is 646 mm if common motor terminal is used.

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 40 °C.
I_{max}	Maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd}.
Typical ratings: No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous current allowing 110% I_N for 1 min / 5 min at 40 °C.
P_N	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 current ratings are the same regardless of the supply voltage within one voltage range.

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

For sine filter selections and ratings, contact ABB.

Liquid-cooled regenerative drives
ACS800-17LC, up to 5200 kW

Efficient liquid cooling
Direct liquid cooling helps to make the drive extremely compact and silent. Liquid cooling eliminates the need for high power filtered air cooling in electrical rooms and delivers effective heat transfer for high overall efficiency.

Complete regenerative drive
Regenerative operation feeds braking energy back into the network and eliminates the need for a braking chopper and external braking components, thus reducing the size, complexity and cost of the solution.

The ACS800-17LC is a complete regenerative drive in a single, compact package. Everything needed for regenerative operation, as well as the line filter, is built-in. The active supply unit provides full power flow in both motoring and generating modes, with ultra-fast transition between the two modes. This makes the drive ideal for a wide range of applications.

Intelligence and high availability
The ACS800-17LC features ABB's direct torque control technology which allows excellent motor control and a LCL line filter and active supply unit to cut harmonic distortion to exceptionally low levels. This allows the drive to exceed the requirements of the relevant international standards on harmonics.

The drive also has built-in redundancy through parallel connected modules: each module is a complete three-phase inverter, meaning that the drive can run with a partial load even when one of the modules is not operating. This enables higher drive availability and greater uptime. In addition, the power and inverter modules are based on compatible hardware, reducing service training needs and spare parts requirements.

"Compact and easy" are the watchwords to describe the entire ACS800 liquid-cooled drive range. They demonstrate how technology enables ABB to add more and more features into a shrinking space – and still give the benefits of easy installation, access and use.

Highlights
- Extremely versatile
- Modular, optimized design
- Programmability
- Wide range of I/O and communication options
- Extremely low harmonic content due to active supply unit and LCL filtering
- Fully regenerative active single drive in a compact package
- DNV, ABS and LR marine type approvals
- IP42 as standard, IP54 optional

Applications
- Thrusters and propulsion systems
- Test benches
- Winders
- Conveyors
- Cranes
- Winches
- Centrifuges

Ratings, types and voltages
ACS800-17LC

ACS800	–	17LC	–	XXXX	–	3 5 7	+	XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Dissipation to liquid	Mass flow	Liquid qty	Type designation	Frame sizes ISU + INU
$I_{cont.\ max}$ A	I_{max} A	$P_{cont.\ max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dBA	kW	l/min	l		
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V												
159	251	90	153	90	119	55	59	6.3	41	9.8	ACS800-17LC-0110-3	R7i + R7i
205	251	110	197	110	153	75	59	7.6	41	9.8	ACS800-17LC-0140-3	R7i + R7i
240	335	132	230	132	180	90	59	8.3	41	9.8	ACS800-17LC-0170-3	R7i + R7i
295	437	160	283	160	221	132	59	9.3	41	9.8	ACS800-17LC-0200-3	R7i + R7i
377	512	200	362	200	282	160	59	12.2	41	10.3	ACS800-17LC-0260-3	R8i + R8i
500	674	250	480	250	374	200	59	14.3	41	10.3	ACS800-17LC-0350-3	R8i + R8i
625	837	355	600	355	468	250	59	17.1	41	10.3	ACS800-17LC-0430-3	R8i + R8i
835	1037	500	802	450	625	355	59	21.7	41	11.1	ACS800-17LC-0580-3	R8i + R8i
1250	1590	710	1200	710	935	500	62	32.6	79	16.6	ACS800-17LC-0870-3	2×R8i + 2×R8i
1635	1994	900	1570	900	1223	710	62	42.3	79	16.6	ACS800-17LC-1130-3	2×R8i + 2×R8i
2430	2941	1400	2333	1400	1818	1000	64	63.1	116	26.1	ACS800-17LC-1680-3	3×R8i + 3×R8i
3210	3906	1800	3082	1800	2401	1400	65	82.8	152	29.9	ACS800-17LC-2220-3	4×R8i + 4×R8i
4765	5799	2800	4574	2400	3564	2000	67	122.8	226	44.6	ACS800-17LC-3300-3	6×R8i + 6×R8i
U_N = 500 V (Range 380 to 500 V). The power ratings are valid at nominal voltage 500 V												
139	232	90	133	75	104	55	59	6.2	41	9.8	ACS800-17LC-0120-5	R7i + R7i
191	252	132	183	110	143	90	59	7.5	41	9.8	ACS800-17LC-0170-5	R7i + R7i
238	335	160	228	160	178	110	59	8	41	9.8	ACS800-17LC-0210-5	R7i + R7i
290	430	200	278	160	217	132	59	9.6	41	9.8	ACS800-17LC-0250-5	R7i + R7i
355	515	200	341	200	266	160	59	12.4	41	10.3	ACS800-17LC-0310-5	R8i + R8i
475	673	315	456	315	355	200	59	14.5	41	10.3	ACS800-17LC-0410-5	R8i + R8i
595	838	400	571	400	445	315	59	16.9	41	10.3	ACS800-17LC-0520-5	R8i + R8i
795	1042	560	763	500	595	400	59	21.4	41	11.1	ACS800-17LC-0690-5	R8i + R8i
1190	1589	800	1142	800	890	630	62	32.2	79	16.6	ACS800-17LC-1030-5	2×R8i + 2×R8i
1560	1996	1000	1498	1000	1167	800	62	42	79	16.6	ACS800-17LC-1350-5	2×R8i + 2×R8i
2310	2943	1600	2218	1600	1728	1200	64	62.8	116	26.1	ACS800-17LC-2000-5	3×R8i + 3×R8i
3050	3885	2000	2928	2000	2281	1600	65	82	152	29.9	ACS800-17LC-2640-5	4×R8i + 4×R8i
4540	5801	3200	4358	3200	3396	2800	67	122.1	226	44.6	ACS800-17LC-3930-5	6×R8i + 6×R8i
U_N = 690 V (Range 525 to 690 V). The power ratings are valid at nominal voltage 690 V												
106	137	110	102	90	79	75	59	6.3	41	9.8	ACS800-17LC-0130-7	R7i + R7i
139	206	132	133	132	104	90	59	7.4	41	9.8	ACS800-17LC-0170-7	R7i + R7i
179	265	200	172	160	134	132	59	7.9	41	9.8	ACS800-17LC-0210-7	R7i + R7i
237	386	250	228	200	177	160	59	12.1	41	10.3	ACS800-17LC-0280-7	R8i + R8i
330	604	315	317	315	247	250	59	14.8	41	10.3	ACS800-17LC-0390-7	R8i + R8i
395	604	400	379	355	295	250	59	18.8	41	10.3	ACS800-17LC-0470-7	R8i + R8i
530	872	560	509	500	396	400	59	21	41	10.3	ACS800-17LC-0630-7	R8i + R8i
795	1344	800	763	710	595	630	62	34.8	70	16.6	ACS800-17LC-0950-7	2×R8i + 2×R8i
1040	1710	1000	998	1000	778	800	62	39.5	79	16.6	ACS800-17LC-1240-7	2×R8i + 2×R8i
1540	2538	1600	1478	1400	1152	1200	64	56.2	116	22.4	ACS800-17LC-1840-7	3×R8i + 3×R8i
2035	3350	2000	1954	2000	1522	1600	65	77.9	152	29.9	ACS800-17LC-2430-7	4×R8i + 4×R8i
3025	4974	3200	2904	2800	2263	2400	67	110	226	41.7	ACS800-17LC-3620-7	6×R8i + 6×R8i
3878	5802	4000	3723	3600	2901	2800	68	146.5	291	56.7	ACS800-17LC-4630-7	8×R8i + 7×R8i
4432	6630	4400	4255	4000	3315	3200	69	157.1	329	61.3	ACS800-17LC-5300-7	9×R8i + 8×R8i
4986	7460	5200	4787	4800	3730	3600	69	184	364	69.6	ACS800-17LC-5960-7	10×R8i + 9×R8i

Dimensions (for LCU see ACS800-07LC, page 27)

Frame size	Height [5] mm	Width mm	Depth [4] mm	Weight kg
R7i + R7i [1]	2003	1230	644	950
R8i + R8i [1]	2003	1230	644	1100
2×R8i + 2×R8i [2]	2003	1930	644	1950
3×R8i + 3×R8i [2]	2003	2430	644	3000
4×R8i + 4×R8i [2]	2003	3230	644	3350
6×R8i + 6×R8i [2]	2003	4230	644	4950
8×R8i + 7×R8i [2]	2003	6230 [3]	644	6150
9×R8i + 8×R8i [2]	2003	6530 [3]	644	6000
10×R8i + 9×R8i [2]	2003	7430 [3]	644	7500

Notes:
[1] Includes an incoming unit (load switch and contactor) as standard
[2] Includes incoming unit (air circuit breaker) as standard. Auxiliary control unit as option.
[3] Includes 200 mm junction section
[4] Total height with marine supports is 2088 mm and depth with marine handles 718 mm.
[5] Pressure release lids require an additional 400 mm
- Supply cable connection from bottom or top. Motor cable connection from bottom
- An output cabinet is needed for top connection of motor cables
- A 400 mm auxiliary control unit is needed for the auxiliary voltage transformer

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 42 °C converter circuit liquid temperature.
I_{max}	Maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd}.
Typical ratings: No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous current allowing 110% I_N for 1min / 5 min at 45 °C.
P_N	Typical motor power in light-overload use.
Heavy-duty use	
I_{hd}	Continuous current allowing 150% I_{hd} for 1min / 5 min at 45 °C.
P_{hd}	Typical motor power in heavy-duty use.

The current ratings are the same regardless of the supply voltage within one voltage range.

The ratings apply at 45 °C ambient temperature. At higher temperatures (up to 55 °C) the derating is 0,5% / 1 °C.

Cabinet-built low harmonic drives
ACS800-37, up to 2700 kW

Easy low harmonic solution
ABB's low harmonic drives offer an easy low harmonic solution incorporated in the drive. The solution to overcome harmonic issues simply comes with the drive without the need for additional filtering equipment or complicated multi-pulse transformer arrangements.

Meets the strictest standards
The ACS800-37 is a low harmonic drive in the cabinet-built power range. It is equipped with an built-in active supply unit and low harmonic line filter. The result is exceptionally low harmonic content in the network, with a total current distortion of less than 5.0%. That exceeds, for example, the requirements set by standard IEEE519 even in the weakest network. The ACS800-37 provides you with a simple, compact solution to meet stringent power quality standards.

Beats external solutions
When compared to multi-pulse transformer solutions, the ACS800-37 does not require a dedicated transformer and thus is simpler in terms of cabling arrangements and requires less floor space. Harmonic performance is better than with 12- and 18-pulse solutions, handling online imbalance or other shortcomings in the supply network. Passive or active external filtering devices are avoided with the ACS800-37, making the solution compact and simple. Another advantage of the ACS800-37 is that it always operates with power factor 1.

Extensive range of features
In line with other ACS800 cabinet-built drives, the ACS800-37 offers a wide variety of standardized configurations to adapt to different application requirements. It has an extensive range of built-in features and accessories. The smart module concept enables easy maintenance and redundancy in the high power range.

Main standard features
- Compact design
- IP21 protection degree
- Active supply unit
- Built-in low harmonic filter
- EMC filter for 2nd environment, unrestricted distribution according to EN 61800-3 (option in frame size R6) (category C3)
- Main switch with aR fuses (in frame sizes R6-R8i)
- Line contactor (in frame sizes R7i-R8i, option in frame size R6)
- Removable air circuit breaker (in frame sizes n×R8i)
- du/dt filters (standard in frame sizes n×R8i)
- Common mode filters for motor protection (in frame sizes R7i-n×R8i)
- Coated boards
- Extensive, programmable I/O
- Long lifetime cooling fan and capacitors
- Inputs galvanically isolated
- I/O and fieldbus extension slots inside
- Alphanumeric multilingual control panel with a startup assistant feature

Accessories for ACS800-37
- Analogue and digital I/O extension modules
- ATEX approved motor protection
- Braking chopper and resistor
- Cabinet heater
- Customer terminal block
- du/dt filters (in frame sizes R6-R8i)
- Earth fault monitoring for unearthed network
- EMC filter for 1st environment, restricted distribution according to EN 61800-3 (category C2)
- Fieldbus modules
- IP22, IP42, IP54 or IP54R protection degrees
- Marine construction
- Output for motor fan
- Pulse encoder interface module
- Safe torque-off (STO)
- Safely-limited speed (SLS)
- Top entry and exit of cables
- 1 or 2 thermistor relays
- 3.5 or 8 Pt100 relays
- Emergency stop categories 0 or 1
- UL or CSA certified design

Plus tailor made accessories through ABB's application engineering.

Ratings, types and voltages
ACS800-37

ACS800	–	37	–	XXXX	–	3 5	+	XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
$I_{cont.\ max}$ A	I_{max} A	$P_{cont.\ max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	kW	m^3/h		
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V.											
120	168	55	114	55	88	45	73	1.8	500	ACS800-37-0060-3	R6
150	234	75	142	75	117	55	73	2.4	500	ACS800-37-0070-3	R6
165	264	90	157	75	132	75	73	2.8	500	ACS800-37-0100-3	R6
202	293	110	194	90	151	75	74	6	1300	ACS800-37-0140-3	R7i
250	363	132	240	132	187	90	74	7	1300	ACS800-37-0170-3	R7i
292	400	160	280	160	218	110	75	7	3160	ACS800-37-0210-3	R8i
370	506	200	355	200	277	132	75	9	3160	ACS800-37-0260-3	R8i
469	642	250	450	250	351	200	75	11	3160	ACS800-37-0320-3	R8i
565	773	315	542	315	423	250	75	14	3160	ACS800-37-0390-3	R8i
730	1000	400	701	355	546	250	75	20	3160	ACS800-37-0510-3	R8i
919	1258	500	882	500	688	355	77	22	6400	ACS800-37-0640-3	2×R8i
1111	1521	630	1067	630	831	450	77	28	6400	ACS800-37-0770-3	2×R8i
1379	1888	800	1324	710	1031	560	77	36	6400	ACS800-37-0960-3	2×R8i
1535	2102	900	1474	800	1149	630	78	39	10240	ACS800-37-1070-3	3×R8i
2056	2814	1200	1973	1100	1538	800	78	54	10240	ACS800-37-1430-3	3×R8i
2610	3573	1600	2506	1400	1953	1100	79	67	12800	ACS800-37-1810-3	4×R8i
U_N = 500 V (Range 380 to 500 V). The power ratings are valid at nominal voltage 500 V.											
120	168	75	114	75	88	55	73	2.4	500	ACS800-37-0070-5	R6
139	234	90	132	90	114	75	73	2.8	500	ACS800-37-0100-5	R6
156	264	110	148 [1]	90	125	75	73	3.4	500	ACS800-37-0120-5	R6
200	291	132	192	132	150	90	74	6	1300	ACS800-37-0170-5	R7i
245	355	160	235 [2]	160	183	110	74	8	1300	ACS800-37-0210-5	R7i
302	438	200	289 [3]	200	226	132	75	8	3160	ACS800-37-0260-5	R8i
365	530	250	350 [4]	250	273	160	75	10	3160	ACS800-37-0320-5	R8i
455	660	315	437	315	340	200	75	12	3160	ACS800-37-0400-5	R8i
525	762	355	504	355	393	250	75	14	3160	ACS800-37-0460-5	R8i
595	863	400	571	400	445	315	75	16	3160	ACS800-37-0510-5	R8i
700	1016	500	672	450	524	315	75	20	3160	ACS800-37-0610-5	R8i
892	1294	630	856	630	667	450	77	24	6400	ACS800-37-0780-5	2×R8i
1005	1458	710	965	630	752	500	77	28	6400	ACS800-37-0870-5	2×R8i
1338	1941	900	1284	900	1001	710	77	38	6400	ACS800-37-1160-5	2×R8i
1528	2217	1120	1467	1120	1143	800	78	41	10240	ACS800-37-1330-5	3×R8i
2037	2956	1400	1956	1300	1524	1000	78	58	10240	ACS800-37-1820-5	3×R8i
2529	3670	1800	2428	1700	1892	1300	79	70	12800	ACS800-37-2200-5	4×R8i

Notes:
[1] 156 A is allowed at 460 V.
[2] 240 A is allowed at 460 V.
[3] 302 A is allowed at 460 V.
[4] 361 A is allowed at 460 V.

Ratings, types and voltages
ACS800-37

ACS800 – 37 – XXXX – 7 + XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow	Type designation	Frame size
$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dB(A)	kW	m^3/h		
U_N = 690 V (Range 525 to 690 V). The power ratings are valid at nominal voltage 690 V.											
57[1)]	86	55	54	45	43	37	73	1.8	500	ACS800-37-0060-7	R6
79	120	75	75	55	60	55	73	2.4	500	ACS800-37-0070-7	R6
93[2)]	142	90	88	75	71	55	73	2.8	500	ACS800-37-0100-7	R6
139	202	132	133	110	104	90	74	7	1300	ACS800-37-0170-7	R7i
162	235	160	156	132	121	110	74	8	1300	ACS800-37-0210-7	R7i
201	301	200	193	160	150	132	75	11	3160	ACS800-37-0260-7	R8i
279	417	250	268	250	209	200	75	12	3160	ACS800-37-0320-7	R8i
335	502	315	322	250	251	200	75	16	3160	ACS800-37-0400-7	R8i
382	571	355	367	355	286	270	75	17	3160	ACS800-37-0440-7	R8i
447	668	450	429	400	334	315	75	18	3160	ACS800-37-0540-7	R8i
659	985	630	632	630	493	450	77	33	6400	ACS800-37-0790-7	2×R8i
729	1091	710	700	710	545	500	77	32	6400	ACS800-37-0870-7	2×R8i
953	1425	900	914	900	713	710	77	39	6400	ACS800-37-1160-7	2×R8i
1112	1663	1120	1067	1120	831	800	78	48	10240	ACS800-37-1330-7	3×R8i
1256	1879	1250	1206	1200	940	900	78	51	10240	ACS800-37-1510-7	3×R8i
1856	2791	1800	1791	1750	1396	1400	79	77	12800	ACS800-37-2320-7	4×R8i
2321	3472	2300	2228	2300	1736	1600	79	94	17920	ACS800-37-2780-7	5×R8i
2665	3987	2700	2559	2600	1999	2000	79	114	19200	ACS800-37-3310-7	6×R8i

Notes:
[1)] 62 A is allowed at 575 V.
[2)] 99 A is allowed at 575 V.

Enclosure
Degree of protection:
IP21 (Standard)
IP22, IP42, IP54, IP54R (Optional)
Paint color: Light beige RAL 7035 semi-gloss

Dimensions

Frame size	Height IP21/22/42 mm	Height IP54 mm	Width mm	Depth [E)] mm	Depth top exit [E)] mm	Weight kg
R6	2130	2315	430	646	646	250
R7i	2130	2315	630 [A)]	646	646	400
R8i	2130	2315	1230 [B)]	646	646	950
2×R8i	2130	2315	2430 [C)]	646	776 [F)]	2000
3×R8i	2130	2315	3230	646	776 [F)]	3060
4×R8i	2130	2315	3830 [D)]	646	776 [F)]	3600
5×R8i	2130	2315	5130 [D)]	646	776 [F)]	4780
6×R8i	2130	2315	5330 [D)]	646	776 [F)]	4930

[A)] 930 mm if equipped with 1st environment (C2) or with du/dt filter.
[B)] 1530 mm if equipped with 1st environment filter.
[C)] 2730 mm if equipped with 1st environment filter (only types 0640-3/0770-3/0780-5/0870-5).
[D)] Add 300 mm if top entry.
[E)] The depth without the handle.
[F)] The depth is 646 mm if common motor terminal is used.

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 40 °C.
I_{max}	Maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd}.
Typical ratings: No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous current allowing 110% I_N for 1 min / 5 min at 40 °C.
P_N	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.

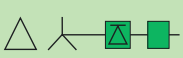
The current ratings are the same regardless of the supply voltage within one voltage range.

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

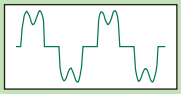
For sine filter selections and ratings, contact ABB.

Alternatives in reducing line harmonics

6 pulse rectifier

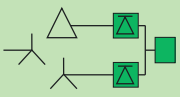


Transformer and cabling simple

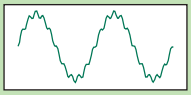


Current very distorted >THDI 30%*

12 pulse rectifier

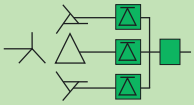


Transformer and cabling complicated

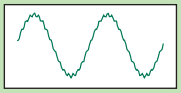


Current distorted >THDI 12%*

18 pulse rectifier



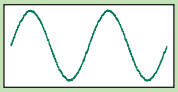
Transformer and cabling complicated



Current wave form good >THDI 6%*

ACS800-37

Transformer and cabling simple



Current wave form best THDI 4%*

* THDI values are typical at nominal load. At partial load the values can be higher.

Liquid-cooled low harmonic drives
ACS800-37LC, up to 5200 kW

Efficient liquid cooling
Direct liquid cooling helps to make the drive extremely compact and silent. Liquid cooling eliminates the need for air cooling in equipment rooms and delivers effective heat transfer for high overall efficiency.

Easy low harmonic solution
ABB's low harmonic drives offer an easy and clean low harmonic solution incorporated into the drive – there is no need for additional filtering equipment or complicated multi-pulse transformer arrangements.

The ACS800-37LC is equipped with a built-in active supply unit to eliminate low order harmonics, and a line filter to reduce high frequency harmonics. The result is an exceptionally low harmonic content in the network, with total current distortion of less than 5%. This level exceeds the requirements specified by IEEE 519, even in the weakest network. The ACS800-37LC represents a straightforward, compact solution that meets stringent power quality standards.

High availability
The ACS800-37LC is designed for high reliability and availability in harsh environments, ensuring continuous and cost-effective operation in all conditions. It also meets several marine and offshore classification requirements such as DNV, LR and ABS.

The drive has built-in redundancy through parallel connected modules: each module is a complete three-phase inverter, meaning that the drive can run with a partial load even when one of the modules is not operating. This enables higher drive availability and greater uptime. In addition, the power and inverter modules are based on compatible hardware, reducing service training needs and spare parts requirements.

"Compact and easy" are the watchwords to describe the entire ACS800 liquid-cooled drive range. They demonstrate how technology enables ABB to add more and more features into a shrinking space – and still give the benefits of easy installation, access and use.

Highlights
- Rugged design
- Silent operation
- Programmability
- Wide range of I/O and communication options
- Highly versatile
- Extremely low harmonic content
- Marine certification
- IP42 as standard, IP54 optional

Applications
- Thrusters and propulsion systems
- Fans
- Extruders
- Conveyors
- Pumps
- Compressors

Ratings, types and voltages
ACS800-37LC

ACS800 – 37LC – XXXX – 3 / 5 / 7 + XXXX

Nominal ratings		No-overload use	Light-overload use		Heavy-duty use		Noise level	Dissipation to liquid*	Mass flow	Liquid qty	Type designation	Frame sizes ISU + INU
$I_{cont.max}$ A	I_{max} A	$P_{cont.max}$ kW	I_N A	P_N kW	I_{hd} A	P_{hd} kW	dBA	kW	l/min	l		
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V.												
159	251	90	153	90	119	55	59	6.3	41	9.8	ACS800-37LC-0110-3	R7i + R7i
205	251	110	197	110	153	75	59	7.6	41	9.8	ACS800-37LC-0140-3	R7i + R7i
240	335	132	230	132	180	90	59	8.3	41	9.8	ACS800-37LC-0170-3	R7i + R7i
295	437	160	283	160	221	132	59	9.3	41	9.8	ACS800-37LC-0200-3	R7i + R7i
377	512	200	362	200	282	160	59	12.2	41	10.3	ACS800-37LC-0260-3	R8i + R8i
500	674	250	480	250	374	200	59	14.3	41	10.3	ACS800-37LC-0350-3	R8i + R8i
625	837	355	600	355	468	250	59	17.1	41	10.3	ACS800-37LC-0430-3	R8i + R8i
835	1037	500	802	450	625	355	59	21.7	41	11.1	ACS800-37LC-0580-3	R8i + R8i
1250	1590	710	1200	710	935	500	62	32.6	79	16.6	ACS800-37LC-0870-3	2×R8i + 2×R8i
1635	1994	900	1570	900	1223	710	62	42.3	79	16.6	ACS800-37LC-1130-3	2×R8i + 2×R8i
2430	2941	1400	2333	1400	1818	1000	64	63.1	116	26.1	ACS800-37LC-1680-3	3×R8i + 3×R8i
3210	3906	1800	3082	1800	2401	1400	65	82.8	152	29.9	ACS800-37LC-2220-3	4×R8i + 4×R8i
4765	5799	2800	4574	2400	3564	2000	67	122.8	226	44.6	ACS800-37LC-3300-3	6×R8i + 6×R8i
U_N = 500 V (Range 380 to 500 V). The power ratings are valid at nominal voltage 500 V.												
139	232	90	133	75	104	55	59	6.2	41	9.8	ACS800-37LC-0120-5	R7i + R7i
191	252	132	183	110	143	90	59	7.5	41	9.8	ACS800-37LC-0170-5	R7i + R7i
238	335	160	228	160	178	110	59	8	41	9.8	ACS800-37LC-0210-5	R7i + R7i
290	430	200	278	160	217	132	59	9.6	41	9.8	ACS800-37LC-0250-5	R7i + R7i
355	515	200	341	200	266	160	59	12.4	41	10.3	ACS800-37LC-0310-5	R8i + R8i
475	673	315	456	315	355	200	59	14.5	41	10.3	ACS800-37LC-0410-5	R8i + R8i
595	838	400	571	400	445	315	59	16.9	41	10.3	ACS800-37LC-0520-5	R8i + R8i
795	1042	560	763	500	595	400	59	21.4	41	11.1	ACS800-37LC-0690-5	R8i + R8i
1190	1589	800	1142	800	890	630	62	32.2	79	16.6	ACS800-37LC-1030-5	2×R8i + 2×R8i
1560	1996	1000	1498	1000	1167	800	62	42	79	16.6	ACS800-37LC-1350-5	2×R8i + 2×R8i
2310	2943	1600	2218	1600	1728	1200	64	62.8	116	26.1	ACS800-37LC-2000-5	3×R8i + 3×R8i
3050	3885	2000	2928	2000	2281	1600	65	82	152	29.9	ACS800-37LC-2640-5	4×R8i + 4×R8i
4540	5801	3200	4358	3200	3396	2800	67	122.1	226	44.6	ACS800-37LC-3930-5	6×R8i + 6×R8i
U_N = 690 V (Range 525 to 690 V). The power ratings are valid at nominal voltage 690 V.												
106	137	110	102	90	79	75	59	6.3	41	9.8	ACS800-37LC-0130-7	R7i + R7i
139	206	132	133	132	104	90	59	7.4	41	9.8	ACS800-37LC-0170-7	R7i + R7i
179	265	200	172	160	134	132	59	7.9	41	9.8	ACS800-37LC-0210-7	R7i + R7i
237	386	250	228	200	177	160	59	12.1	41	10.3	ACS800-37LC-0280-7	R8i + R8i
330	604	315	317	315	247	250	59	14.8	41	10.3	ACS800-37LC-0390-7	R8i + R8i
395	604	400	379	355	295	250	59	18.8	41	10.3	ACS800-37LC-0470-7	R8i + R8i
530	872	560	509	500	396	400	59	21	41	10.3	ACS800-37LC-0630-7	R8i + R8i
795	1344	800	763	710	595	630	62	34.8	70	16.6	ACS800-37LC-0950-7	2×R8i + 2×R8i
1040	1710	1000	998	1000	778	800	62	39.5	79	16.6	ACS800-37LC-1240-7	2×R8i + 2×R8i
1540	2538	1600	1478	1400	1152	1200	64	56.2	116	22.4	ACS800-37LC-1840-7	3×R8i + 3×R8i
2035	3350	2000	1954	2000	1522	1600	65	77.9	152	29.9	ACS800-37LC-2430-7	4×R8i + 4×R8i
3025	4974	3200	2904	2800	2263	2400	67	110	226	41.7	ACS800-37LC-3620-7	6×R8i + 6×R8i
3878	5802	4000	3723	3600	2901	2800	68	146.5	291	56.7	ACS800-37LC-4630-7	8×R8i + 7×R8i
4432	6630	4400	4255	4000	3315	3200	69	157.1	329	61.3	ACS800-37LC-5300-7	9×R8i + 8×R8i
4986	7460	5200	4787	4800	3730	3600	69	184	364	69.6	ACS800-37LC-5960-7	10×R8i + 9×R8i

* 98% of heat losses are carried out with liquid

Dimensions (for LCU see ACS800-07LC, page 27)

Frame size	Height [5] mm	Width mm	Depth [4] mm	Weight kg
R7i + R7i [1]	2003	1230	644	950
R8i + R8i [1]	2003	1230	644	1100
2×R8i + 2×R8i [2]	2003	1930	644	1950
3×R8i + 3×R8i [2]	2003	2430 [6]	644	3000
4×R8i + 4×R8i [2]	2003	3230	644	3350
6×R8i + 6×R8i [2]	2003	4230 [7]	644	4950
8×R8i + 7×R8i [2]	2003	6230 [3]	644	6150
9×R8i + 8×R8i [2]	2003	6530 [3]	644	6000
10×R8i + 9×R8i [2]	2003	7430 [3]	644	7500

Notes:
1) Includes an incoming unit (load switch and contactor) as standard
2) Includes incoming unit (air circuit breaker) as standard. Auxiliary control unit as option.
3) Includes 200 mm junction section
4) Total height with marine supports is 2088 mm and depth with marine handles 718 mm
5) Pressure release lids require an additional 400 mm
6) 400 V and 500 V the width is 3100 mm
7) 400 V and 500 V the width is 5000 mm
- Supply cable connection from bottom or top. Motor cable connection from bottom.
- An output cabinet is needed for top connection of motor cables
- A 400 mm auxiliary control unit is needed for the auxiliary voltage transformer

Nominal ratings	
$I_{cont.max}$	Rated current available continuously without overloadability at 42 °C converter circuit liquid temperature.
I_{max}	Maximum output current. Available for 10 s at start, otherwise as long as allowed by drive temperature. Note: max. motor shaft power is 150% P_{hd}.
Typical ratings: No-overload use	
$P_{cont.max}$	Typical motor power in no-overload use.
Light-overload use	
I_N	Continuous current allowing 110% I_N for 1min/5 min at 45 °C.
P_N	Typical motor power in light-overload use.
Heavy-duty use	
I_{hd}	Continuous current allowing 150% I_{hd} for 1min/5 min at 45 °C.
P_{hd}	Typical motor power in heavy-duty use.

The current ratings are the same regardless of the supply voltage within one voltage range.

The ratings apply at 45 °C ambient temperature. At higher temperatures (up to 55 °C) the derating is 0,5% / 1 °C.

Brake options

Brake chopper

The ACS800 series has built-in brake choppers for all types. Therefore, no additional space or installation time is needed. The brake chopper is part of the standard delivery for the frame sizes R2 - R3; R4 only 690 V. For the other frames a brake chopper is a selectable option.

Braking control is integrated into the ACS800 series. It controls the braking, supervises the system status and detects failures such as brake resistor and resistor cable short circuits, chopper short circuit, and calculated resistor overtemperature.

Brake resistor

The SACE/SAFUR brake resistors are separately available for all ACS800 types. Resistors other than the standard resistors may be used providing the specified resistance value is not decreased, and the heat dissipation capacity of the resistor is sufficient for the drive application.

For ACS800 units, no separate fuses in the brake circuit are required if the following conditions are met:

- The ACS800 mains cable is protected with fuses
- No mains cable/fuse overrating takes place

U_N = 230 V (Range 208 to 240 V)

ACS800 type designation	Brake chopper power	Brake resistor(s)			
	Continuous P_{brcont} [kW]	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]
ACS800-01-0001-2	0.6	SACE08RE44	44	210	1
ACS800-01-0002-2	0.8	SACE08RE44	44	210	1
ACS800-01-0003-2	1.1	SACE08RE44	44	210	1
ACS800-01-0004-2	1.5	SACE08RE44	44	210	1
ACS800-01-0005-2	2.2	SACE15RE22	22	420	2
ACS800-01-0006-2	3	SACE15RE22	22	420	2
ACS800-01-0009-2	4	SACE15RE22	22	420	2
ACS800-01-0011-2	5.5	SACE15RE13	13	435	2
ACS800-01-0016-2	11	SAFUR90F575	8	1800	4.5
ACS800-01-0020-2	17	SAFUR90F575	8	1800	4.5
ACS800-01-0025-2	23	SAFUR80F500	6	2400	6
ACS800-01-0030-2	28	SAFUR125F500	4	3600	9
ACS800-01-0040-2	33	SAFUR125F500	4	3600	9
ACS800-01-0050-2	45	2×SAFUR125F500	2	7200	18
ACS800-01-0060-2	56	2×SAFUR125F500	2	7200	18
ACS800-01-0070-2	68	2×SAFUR125F500	2	7200	18

ACS800 type designation	Brake chopper power				Brake resistor(s)			
	5 /60 s P_{br5} [kW]	10 /60 s P_{br10} [kW]	30 /60 s P_{br30} [kW]	Continuous P_{brcont} [kW]	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]
ACS800-02-0080-2	68	68	68	54	SAFUR 160F380	1.78	3600	9
ACS800-02-0100-2	83	83	83	54	SAFUR 160F380	1.78	3600	9
ACS800-02-0120-2	105	67	60	40	2×SAFUR200F500	1.35	10800	27
ACS800-02-0140-2	135	135	135	84	2×SAFUR160F380	0.89	7200	18
ACS800-02-0170-2	135	135	135	84	2×SAFUR160F380	0.89	7200	18
ACS800-02-0210-2	165	165	165	98	2×SAFUR160F380	0.89	7200	18
ACS800-02-0230-2	165	165	165	113	2×SAFUR160F380	0.89	7200	18
ACS800-02-0260-2	223	170	125	64	4×SAFUR160F380	0.45	14400	36
ACS800-02-0300-2	223	170	125	64	4×SAFUR160F380	0.45	14400	36

U_N = 400 V (Range 380 to 415 V)

ACS800 type designation	Brake chopper power	Brake resistor(s)			
	Continuous P_{brcont} [kW]	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]
ACS800-01-0003-3	1.1	SACE08RE44	44	210	1
ACS800-01-0004-3	1.5	SACE08RE44	44	210	1
ACS800-01-0005-3	2.2	SACE08RE44	44	210	1
ACS800-01-0006-3	3	SACE08RE44	44	210	1
ACS800-01-0009-3	4	SACE08RE44	44	210	1
ACS800-01-0011-3	5.5	SACE15RE22	22	420	2
ACS800-01-0016-3	7.5	SACE15RE22	22	420	2
ACS800-01-0020-3	11	SACE15RE22	22	420	2
ACS800-01-0025-3	23	SACE15RE13	13	430	2
ACS800-01-0030-3	28	SACE15RE13	13	430	2
ACS800-01-0040-3	33	SAFUR90F575	8	1800	4.5
ACS800-01-0050-3	45	SAFUR90F575	8	1800	4.5
ACS800-01-0060-3	56	SAFUR90F575	8	1800	4.5
ACS800-01/07-0075-3	70	SAFUR80F500	6	2400	6
ACS800-01/07-0100-3	83	SAFUR125F500	4	3600	9
ACS800-01/07-0120-3	113	SAFUR125F500	4	3600	9
ACS800-01/07-0135-3	132	SAFUR200F500	2.7	5400	13.5
ACS800-01/07-0165-3	132	SAFUR200F500	2.7	5400	13.5
ACS800-01/07-0205-3	160	SAFUR200F500	2.7	5400	13.5

ACS800 type designation	Brake chopper power				Brake resistor(s)			
	5 / 60 s P_{br5} [kW]	10 / 60 s P_{br10} [kW]	30 / 60 s P_{br30} [kW]	Continuous P_{brcont} [kW]	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]
ACS800-02-0140-3	135	135	100	80	SAFUR200F500	2.70	5400	13.5
ACS800-02-0170-3	165	150	100	80	SAFUR200F500	2.70	5400	13.5
ACS800-02-0210-3	165	150	100	80	SAFUR200F500	2.70	5400	13.5
ACS800-02/07-0260-3	240	240	240	173	2×SAFUR210F575	1.70	8400	21
ACS800-02/07-0320-3	300	300	300	143	2×SAFUR200F500	1.35	10800	27
ACS800-02/07-0400-3	375	375	273	130	4×SAFUR125F500	1.00	14400	36
ACS800-02/07-0440-3	473	355	237	120	4×SAFUR210F575	0.85	16800	42
ACS800-02/07-0490-3	500	355	237	120	4×SAFUR210F575	0.85	16800	42

Brake options

U_N = 500 V (Range 380 to 500 V)

ACS800 type designation	Brake chopper power	Brake resistor(s)			
	Continuous P_{brcont} [kW]	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]
ACS800-01-0004-5	1.5	SACE08RE44	44	210	1
ACS800-01-0005-5	2.2	SACE08RE44	44	210	1
ACS800-01-0006-5	3	SACE08RE44	44	210	1
ACS800-01-0009-5	4	SACE08RE44	44	210	1
ACS800-01-0011-5	5.5	SACE08RE44	44	210	1
ACS800-01-0016-5	7.5	SACE15RE22	22	420	2
ACS800-01-0020-5	11	SACE15RE22	22	420	2
ACS800-01-0025-5	15	SACE15RE22	22	420	2
ACS800-01-0030-5	28	SACE15RE13	13	435	2
ACS800-01-0040-5	33	SACE15RE13	13	435	2
ACS800-01-0050-5	45	SAFUR90F575	8	1800	4.5
ACS800-01-0060-5	56	SAFUR90F575	8	1800	4.5
ACS800-01-0070-5	68	SAFUR90F575	8	1800	4.5
ACS800-01/07-0105-5	83	SAFUR80F500	6	2400	6
ACS800-01/07-0120-5	113	SAFUR125F500	4	3600	9
ACS800-01/07-0140-5	135	SAFUR125F500	4	3600	9
ACS800-01/07-0165-5	160	SAFUR125F500	4	3600	9
ACS800-01/07-0205-5	160	SAFUR125F500	4	3600	9
ACS800-01/07-0255-5	200	SAFUR200F500	2.7	5400	13.5

ACS800 type designation	Brake chopper power				Brake resistor(s)			
	5 / 60 s P_{br5} [kW]	10 / 60 s P_{br10} [kW]	30 / 60 s P_{br30} [kW]	Continuous P_{brcont} [kW]	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]
ACS800-02-0170-5	165	132 [2]	120	80	SAFUR200F500	2.70	5400	13.5
ACS800-02-0210-5	198	132 [2]	120	80	SAFUR200F500	2.70	5400	13.5
ACS800-02-0260-5	198 [1]	132 [2]	120	80	SAFUR200F500	2.70	5400	13.5
ACS800-02/07-0320-5	300	300	300	300	2xSAFUR125F500	2.00	7200	18
ACS800-02/07-0400-5	375	375	375	234	2XSAFUR210F575	1.70	8400	21
ACS800-02/07-0440-5	473	473	450	195	2xSAFUR200F500	1.35	10800	27
ACS800-02/07-0490-5	480	480	470	210	2xSAFUR200F500	1.35	10800	27
ACS800-02/07-0550-5	600	400 [4]	300	170	4xSAFUR125F500	1.00	14400	36
ACS800-02/07-0610-5	600 [3]	400 [4]	300	170	4xSAFUR125F500	1.00	14400	36

U_N = 690 V (Range 525 to 690 V)

ACS800 type designation	Brake chopper power	Brake resistor(s)			
	Continuous P_{brcont} [kW]	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]
ACS800-01-0011-7	8	SACE08RE44	44	210	1
ACS800-01-0016-7	11	SACE08RE44	44	210	1
ACS800-01-0020-7	16	SACE08RE44	44	210	1
ACS800-01-0025-7	22	SACE08RE44	44	210	2
ACS800-01-0030-7	28	SACE15RE22	22	420	2
ACS800-01-0040-7	22/33 [8]	SACE15RE22	22	420	2
ACS800-01-0050-7	45	SACE15RE13	13	435	2
ACS800-01-0060-7	56	SACE15RE13	13	435	2
ACS800-01/07-0070-7	68	SAFUR90F575	8	1800	4.5
ACS800-01/07-0100-7	83	SAFUR90F575	8	1800	4.5
ACS800-01/07-0120-7	113	SAFUR80F500	6	2400	6
ACS800-01/07-0145-7	160	SAFUR80F500	6	2400	6
ACS800-01/07-0175-7	160	SAFUR80F500	6	2400	6
ACS800-01/07-0205-7	160	SAFUR80F500	6	2400	6

ACS800 type designation	Brake chopper power				Brake resistor(s)			
	5 / 60 s P_{br5} [kW]	10 / 60 s P_{br10} [kW]	30 / 60 s P_{br30} [kW]	Continuous P_{brcont} [kW]	Type	R [Ohm]	E_r [kJ]	P_{rcont} [kW]
ACS800-02-0140-7	125 [5]	110	90	75	SAFUR80F500	6.00	2400	6
ACS800-02-0170-7	125 [6]	110	90	75	SAFUR80F500	6.00	2400	6
ACS800-02-0210-7	125 [6]	110	90	75	SAFUR80F500	6.00	2400	6
ACS800-02/07-0260-7	135 [7]	120	100	80	SAFUR80F500	6.00	2400	6
ACS800-02/07-0320-7	300	300	300	260	SAFUR200F500	2.70	5400	13.5
ACS800-02/07-0400-7	375	375	375	375	SAFUR200F500	2.70	5400	13.5
ACS800-02/07-0440-7	430	430	430	385	SAFUR200F500	2.70	5400	13.5
ACS800-02/07-0490-7	550	400	315	225	2×SAFUR125F500	2.00	7200	18
ACS800-02/07-0550-7	550	400	315	225	2×SAFUR125F500	2.00	7200	18
ACS800-02/07-0610-7	550	400	315	225	2×SAFUR125F500	2.00	7200	18

[1] 240 kW possible if ambient below 33 °C.
[2] 160 kW possible if ambient below 33 °C.
[3] 630 kW possible if ambient below 33 °C.
[4] 450 kW possible if ambient below 33 °C.
[5] 135 kW possible if ambient below 33 °C.
[6] 148 kW possible if ambient below 33 °C.
[7] 160 kW possible if ambient below 33 °C.
[8] 22 kW with standard 22 ohm resistor, 33 kW with 32 to 37 ohm resistor.

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

Dimensions

Brake resistor	Height mm	Width mm	Depth mm	Weight kg
SACE08RE44	365	290	131	6.1
SACE15RE22	365	290	131	6.1
SACE15RE13	365	290	131	6.8
SAFUR80F500	600	300	345	14
SAFUR90F575	600	300	345	12
SAFUR160F380	1320	300	345	25
SAFUR180F460	1320	300	345	32
SAFUR125F500	1320	300	345	25
SAFUR200F500	1320	300	345	30
SAFUR210F575	1320	300	345	27

Maximum braking power of the ACS800 equipped with the standard chopper and the standard resistor.

P_{br5}	5 s / 1 min
P_{br10}	10 s / 1 min
P_{br30}	30 s / 1 min The drive and the chopper will withstand this braking power for 5/10/30 seconds every one minute. Note: The braking energy transmitted to the resistor during any period shorter than 400 seconds may not exceed E_r. (E_r varies depending on the 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 ACS800-02/07 units.
R	Resistance value for the listed resistor type. Note: This is also the 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.

Additional width for ACS800-07

Resistor quantity	mm
1 × SAFUR	400
2 × SAFUR	800
4 × SAFUR	1600

SACE 15 RE 13

Brake options

Brake chopper and resistor options for ACS800-07 in frame sizes 2×R8i and 3×R8i.

Type designation	Nominal ratings					Duty cycle (1 min/ 5 min)		Duty cycle (10 s/ 60 s)					
	$P_{br.\,max}$ kW	R ohm	I_{max} A	I_{rms} A	$P_{cont.}$ kW	$P_{br.}$ kW	I_{rms} A	$P_{br.}$ kW	I_{rms} A	E_r kJ	Brake chopper type	Resistor type	Additional width mm
U_N = 400 V													
ACS800-07-0610-3+D150	706	2×1.2	1090	298	192	606	936	706	1090	-	2×NBRA659	-	800
ACS800-07-0770-3+D150	706	2×1.2	1090	298	192	606	936	706	1090	-	2×NBRA659	-	800
ACS800-07-0870-3+D150	1058	3×1.2	1635	447	288	909	1404	1059	1635	-	3×NBRA659	-	1200
ACS800-07-1030-3+D150	1058	3×1.2	1635	447	288	909	1404	1059	1635	-	3×NBRA659	-	1200
ACS800-07-0610-3+D150+D151	706	2×1.2	1090	168	108	333	514	575	888	24000	2×NBRA659	2×(2×SAFUR180F460)	2400
ACS800-07-0770-3+D150+D151	706	2×1.2	1090	168	108	333	514	575	888	24000	2×NBRA659	2×(2×SAFUR180F460)	2400
ACS800-07-0870-3+D150+D151	1058	3×1.2	1635	252	162	500	771	862	1332	36000	3×NBRA659	3×(2×SAFUR180F460)	3600
ACS800-07-1030-3+D150+D151	1058	3×1.2	1635	252	162	500	771	862	1332	36000	3×NBRA659	3×(2×SAFUR180F460)	3600
U_N = 500 V													
ACS800-07-0760-5+D150	806	2×1.43	1142	272	218	634	782	806	996	-	2×NBRA659	-	800
ACS800-07-0910-5+D150	806	2×1.43	1142	272	218	634	782	806	996	-	2×NBRA659	-	800
ACS800-07-1090-5+D150	1208	3×1.43	1713	408	327	951	1173	1209	1494	-	3×NBRA659	-	1200
ACS800-07-1210-5+D150	1208	3×1.43	1713	408	327	951	1173	1209	1494	-	3×NBRA659	-	1200
ACS800-07-0760-5+D150+D151	806	2×1.35	1210	134	108	333	412	575	710	21600	2×NBRA659	2×(2×SAFUR200F500)	2400
ACS800-07-0910-5+D150+D151	806	2×1.35	1210	134	108	333	412	575	710	21600	2×NBRA659	2×(2×SAFUR200F500)	2400
ACS800-07-1090-5+D150+D151	1208	3×1.35	1815	201	162	500	618	862	1065	32400	3×NBRA659	3×(2×SAFUR200F500)	3600
ACS800-07-1210-5+D150+D151	1208	3×1.35	1815	201	162	500	618	862	1065	32400	3×NBRA659	3×(2×SAFUR200F500)	3600
U_N = 690 V													
ACS800-07-0750-7+D150	807	2×2.72	828	214	238	596	534	808	722	-	2×NBRA669	-	800
ACS800-07-0870-7+D150	807	2×2.72	828	214	238	596	534	808	722	-	2×NBRA669	-	800
ACS800-07-1060-7+D150	1211	3×2.72	1242	321	357	894	801	1212	1083	-	3×NBRA669	-	1200
ACS800-07-1160-7+D150	1211	3×2.72	1242	321	357	894	801	1212	1083	-	3×NBRA669	-	1200
ACS800-07-0750-7+D150+D151	807	2×1.35	1670	194	108	333	298	575	514	21600	2×NBRA669	2×(2×SAFUR200F500)	2400
ACS800-07-0870-7+D150+D151	807	2×1.35	1670	194	108	333	298	575	514	21600	2×NBRA669	2×(2×SAFUR200F500)	2400
ACS800-07-1060-7+D150+D151	1211	3×1.35	2505	291	162	500	447	862	771	32400	3×NBRA669	3×(2×SAFUR200F500)	3600
ACS800-07-1160-7+D150+D151	1211	3×1.35	2505	291	162	500	447	862	771	32400	3×NBRA669	3×(2×SAFUR200F500)	3600

Brake chopper and resistor options for ACS800-37 in frame sizes R6-2×R8i.

Type designation	Nominal ratings					Duty cycle (1 min/ 5 min)		Duty cycle (10 s/ 60 s)					
	$P_{br.\,max}$ kW	R ohm	I_{max} A	I_{rms} A	$P_{cont.}$ kW	$P_{br.}$ kW	I_{rms} A	$P_{br.}$ kW	I_{rms} A	E_r kJ	Brake chopper type	Resistor type	Additional width mm
U_N = 400 V													
ACS800-37-0060...0170-3+D150	230	1.7	384	109	70	230	355	230	355	-	NBRA658	-	400
ACS800-37-0210...0510-3+D150	353	1.2	545	149	96	303	468	353	545	-	NBRA659	-	400
ACS800-37-0640...0770-3+D150	706	2×1.2	1090	298	192	606	936	706	1090	-	2×NBRA659	-	800
ACS800-37-0960-3+D150	1058	3×1.2	1635	447	288	909	1404	1059	1635	-	3×NBRA659	-	1200
ACS800-37-0060...0170-3+D150+D151	230	1.7	384	65	42	130	200	224	346	8400	NBRA658	2×SAFUR210F575	1200
ACS800-37-0210...0510-3+D150+D151	353	1.2	545	84	54	287	444	287	444	12000	NBRA659	2×SAFUR180F460	1200
ACS800-37-0640...0770-3+D150+D151	706	2×1.2	1090	168	108	333	514	575	888	24000	2×NBRA659	2×(2×SAFUR180F460)	2400
ACS800-37-0960-3+D150+D151	1058	3×1.2	1635	252	162	500	771	862	1332	36000	3×NBRA659	3×(2×SAFUR180F460)	3600
U_N = 500 V													
ACS800-37-0070...0210-5+D150	268	2.15	380	101	81	268	331	268	331	-	NBRA658	-	400
ACS800-37-0260...0610-5+D150	403	1.43	571	136	109	317	391	403	498	-	NBRA659	-	400
ACS800-37-0780...0870-5+D150	806	2×1.43	1142	272	218	634	782	806	996	-	2×NBRA659	-	800
ACS800-37-1160-5+D150	1208	3×1.43	1713	408	327	951	1173	1209	1494	-	3×NBRA659	-	1200
ACS800-37-0070...0210-5+D150+D151	268	2	408	45	36	111	137	192	237	7200	NBRA658	2×SAFUR125F500	1200
ACS800-37-0260...0610-5+D150+D151	403	1.35	605	67	54	167	206	287	355	10800	NBRA659	2×SAFUR200F500	1200
ACS800-37-0780...0870-5+D150+D151	806	2×1.35	1210	134	108	333	412	575	710	21600	2×NBRA659	2×(2×SAFUR200F500)	2400
ACS800-37-1160+D150+D151	1208	3×1.35	1815	201	162	500	618	862	1065	32400	3×NBRA659	3×(2×SAFUR200F500)	3600
U_N = 690 V													
ACS800-37-0170...0540-7+D150	404	2.72	414	107	119	298	267	404	361	-	NBRA669	-	400
ACS800-37-0790...0870-7+D150	807	2×2.72	828	214	238	596	534	808	722	-	2×NBRA669	-	800
ACS800-37-1160-7+D150	1211	3×2.72	1242	321	357	894	801	1212	1083	-	3×NBRA669	-	1200
ACS800-37-0170...0540-7+D150	404	1.35	835	97	54	167	149	287	257	10800	NBRA669	2×SAFUR200F500	1200
ACS800-37-0790...0870-7+D150	807	2×1.35	1670	194	108	333	298	575	514	21600	2×NBRA669	2×(2×SAFUR200F500)	2400
ACS800-37-1160-7+D150	1211	3×1.35	2505	291	162	500	447	862	771	32400	3×NBRA669	3×(2×SAFUR200F500)	3600

Brake choppers and resistors for larger types are available as customised option.
The drive may limit the available braking power.

$P_{br.max}$	Maximum short time braking power
R	Recommended braking resistor resistance. Also nominal resistance of corresponding SAFUR resistor. Dedicated resistor for each brake chopper.
I_{max}	Maximum peak current during braking. Current is achieved with recommended resistor resistance.
$P_{cont.}$	Maximum continous braking power
E_r	SAFUR resistor nominal braking capacity without forced cooling
$P_{br.}$	Braking power during corresponding cycle load: 1 min / 5 min = 1 minute braking with power $P_{br.}$ and 4 minutes unload. 10 s / 60 s = 10 second braking with power $P_{br.}$ and 50 seconds unload.
I_{rms}	Corresponding rms current per chopper during load cycle.

Brake options

3-phase high power brake units for ACS800-07LC, -17LC and -37LC

Resistor data		Nominal ratings		No-overload use	Cycle load* (1min/5min)			Noise level	Dissipation to liquid*			Dynamic braking unit	Frame size
R_{min}	R_{max}	$I_{dc\ peak}$	I_{rms}	$P_{contmax}$	$I_{dc\ peak}$	I_{rms}	P_{br}		(chopper)	Massflow	Liquid Qty	Type designation	INU
Ohm	Ohm	A DC	A DC	kW	A DC	A DC	kW	dB(A)	kW	l/min	l		
U_N = 400 V (Range 380 to 415 V)													
3 ×3.5 Ohm	3×4.1 Ohm	390	155	250	500	176	320	53	2.5	13	3	ACS800-607LC-0250-3	R7i
3×1.7 Ohm	3×2.1 Ohm	781	310	500	999	351	640	53	7.1	13	3	ACS800-607LC-0500-3	R8i
3×1.2 Ohm	3×1.4 Ohm	1171	465	750	1499	527	960	53	9.0	13	3	ACS800-607LC-0750-3	R8i
2×(3×1.7) Ohm	2×(3×2.1) Ohm	1562	621	1000	1998	702	1290	55	13.9	26	6	ACS800-607LC-1000-3	2×R8i
2×(3×1.2) Ohm	2×(3×1.4) Ohm	2342	931	1510	2997	1053	1930	55	17.5	26	6	ACS800-607LC-1510-3	2×R8i
3×(3×1.2) Ohm	3×(3×1.4) Ohm	3514	1396	2260	4496	1580	2890	57	26.0	39	9	ACS800-607LC-2260-3	3×R8i
4×(3×1.2) Ohm	4×(3×1.4) Ohm	4685	1862	3010	5994	2106	3860	58	34.1	52	12	ACS800-607LC-3010-3	4×R8i
5×(3×1.2) Ohm	5×(3×1.4) Ohm	5856	2327	3770	7493	2633	4820	59	42.4	65	15	ACS800-607LC-3770-3	5×R8i
U_N = 500 V (Range 380 to 500 V)													
3× 4.3 Ohm	3×5.2 Ohm	390	155	310	500	176	400	53	2.6	13	3	ACS800-607LC-0310-5	R7i
3×2.2 Ohm	3×2.6 Ohm	781	310	630	999	351	800	53	6.9	13	3	ACS800-607LC-0630-5	R8i
3×1.4 Ohm	3×1.7 Ohm	1171	465	940	1499	527	1210	53	8.8	13	3	ACS800-607LC-0940-5	R8i
2×(3×2.2) Ohm	2×(3×2.6) Ohm	1562	621	1260	1998	702	1610	55	13.3	26	6	ACS800-607LC-1260-5	2×R8i
2×(3×1.4) Ohm	2×(3×1.7) Ohm	2342	931	1880	2997	1053	2410	55	17.0	26	6	ACS800-607LC-1880-5	2×R8i
3×(3×1.4) Ohm	3×(3×1.7) Ohm	3514	1396	2830	4496	1580	3620	57	25.4	39	9	ACS800-607LC-2830-5	3×R8i
4×(3×1.4) Ohm	4×(3×1.7) Ohm	4685	1862	3770	5994	2106	4820	58	33.2	52	12	ACS800-607LC-3770-5	4×R8i
5×(3×1.4) Ohm	5×(3×1.7) Ohm	5856	2327	4710	7493	2633	6030	59	41.3	65	15	ACS800-607LC-4710-5	5×R8i
U_N = 690 V (Range 525 to 690 V)													
3× 6 Ohm	3×7.1 Ohm	390	155	430	500	176	550	53	2.4	13	3	ACS800-607LC-0430-7	R7i
3×3 Ohm	3×3.6 Ohm	781	310	870	999	351	1110	53	8.0	13	3	ACS800-607LC-0870-7	R8i
3×2 Ohm	3×2.4 Ohm	1171	465	1300	1499	527	1660	53	8.7	13	3	ACS800-607LC-1300-7	R8i
2×(3×3) Ohm	2×(3×3.6) Ohm	1562	621	1730	1998	702	2220	55	15.6	26	6	ACS800-607LC-1730-7	2×R8i
2×(3×2) Ohm	2×(3×2.4) Ohm	2342	931	2600	2997	1053	3330	55	17.1	26	6	ACS800-607LC-2600-7	2×R8i
3×(3×2) Ohm	3×(3×2.4) Ohm	3514	1396	3900	4496	1580	4990	57	25.3	39	9	ACS800-607LC-3900-7	3×R8i
4×(3×2) Ohm	4×(3×2.4) Ohm	4685	1862	5200	5994	2106	6650	58	33.6	52	12	ACS800-607LC-5200-7	4×R8i
5 × (3 × 2) Ohm	5 × (3 × 2.4) Ohm	5856	2327	6500	7493	2633	8320	59	41.6	65	15	ACS800-607LC-6500-7	5×R8i

* 98% of heat losses are carried out with liquid

Dimensions

Frame size	Height[1) 2)] mm	Width[3)] mm	Depth[1)] mm	Weight kg
R7i	2003	400/700	644	300
R8i	2003	400/700	644	300
2×R8i	2003	800/1400	644	600
3×R8i	2003	1200/2100	644	900
4×R8i	2003	1600/2800	644	1200
5×R8i	2003	2000/3500	644	1500

1) Total height with marine supports is 2088 mm and depth with marine handles 718 mm.
2) Pressure release lids require an additional 400 mm.
3) First values for bottom exit and latter values for top exit.

Resistor	
R_{min}	Minimum allowed resistance value of the brake resistor for one phase of the brake module.
R_{max}	Resistance value of the brake resistor for one phase of the brake module corresponding to the maximum achieved continuous braking power.
Note: Connect one resistor per brake module phase. For example, a brake unit of frame size 2×R8i including two brake modules –> 2×3 resistors are needed.	
Typical ratings for no-overload use	
I_{dc}	Total input DC current of brake unit.
I_{rms}	Total rms DC output phase current of brake unit.
I_{max}	Peak brake current (DC) per chopper module phase.
$P_{cont.max}$	Maximum continuous braking power per brake unit.
Cyclic load (1 min / 5 min)	
I_{dc}	Total input DC current of brake unit during a period of 1 minute with braking power P_{br}
I_{rms}	Total rms DC current per brake unit phase during a period of 1 minute with braking power P_{br}
P_{br}	Short term braking power per brake unit allowed for one minute every 5 minutes.

Brake chopper options for ACS800-07LC, -17LC and -37LC

Nominal ratings					Duty cycle (1 min / 5 min)		Duty cycle (10 s / 60 s)		Height	Width	Weight	Noise	Dissipation to liquid*	Massflow	Liquid qty	Module type
$P_{br.\ max}$ kW	R ohm	I_{max} A	I_{rms} A	$P_{cont.}$ kW	$P_{br.}$ kW	I_{rms} A	$P_{br.}$ kW	I_{rms} A	mm	mm	kg	dB(A)	kW	kg/h	l	
Braking chopper U_N = 690 V (Range 525 to 690 V)																
404	2.72	414	107	119	298	267	404	361	2003	400	200	45	1.9	2	3.1	NBRW669
807	2.72	414	107	238	596	533	808	361	2003	800	400	48	3.8	4	6.2	2×NBRW669
1211	2.72	414	107	357	894	533	1212	361	2003	1200	600	50	5.6	6	9.3	3×NBRW669
1615	2.72	414	107	476	1192	533	1616	361	2003	1600	800	51	7.5	8	12.4	4×NBRW669
2019	2.72	414	107	595	1490	533	2020	361	2003	2000	1000	51	9.4	10	15.5	5×NBRW669
2422	2.72	414	107	714	1788	533	2424	361	2003	2400	1200	52	11.3	12	18.6	6×NBRW669

* 98% of heat losses are carried out with liquid

EMC - Electromagnetic compatibility and ACS800

The electrical/electronic equipment must be able to operate without problems within an electromagnetic environment. This is called immunity. The ACS800 is designed to have adequate immunity against interference from other equipment. Likewise, the equipment must not disturb or interfere with any other product or system within its locality. This is called emission. Each ACS800 model can be equipped with an built-in filter to reduce high frequency emission.

All declarations concerning CE marking can be found on the www.abb.com/drives website.

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 equipments and systems including drive component inside. Drive units complying with 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 nor require a motor to be connected as a load. The emission limits are comparable according to the following table, EMC standards.

1st environment vs 2nd environment

1st environment

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

2nd environment

2nd environment includes all establishments other than those directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.

Selecting an EMC filter

The following table gives the correct filter selection.

EMC standards

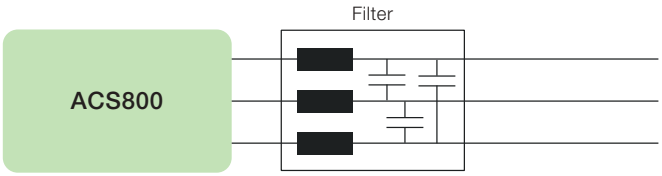
EN 61800-3/A11 (2000), product standard	EN 61800-3 (2004), product standard	EN 55011, product family standard for industrial, scientific and medical (ISM) equipment	EN 61000-6-4, generic emission standard for industrial environments	EN 61000-6-3, generic emission standard for residential, commercial 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

Type	Voltage	Frame sizes	1st environment, restricted distribution, C2, grounded network (TN)	2nd environment, C3, grounded network (TN)	2nd environment, C3, floating network (IT)
ACS800-01	400 to 500	R2-R6	+E202	+E200 /+E210 (R6 frame size)	- *) /+E210 (R6 frame size)
	690	R2-R6	-	+E200 /+E210 (R6 frame size)	- *) /+E210 (R6 frame size)
ACS800-11	400-500	R5-R6	+E202	+E200	- *)
	690	R6	-	+E200	- *)
ACS800-31	400 to 500	R5-R6	+E202	+E200	- *)
	690	R6	-	+E200	- *)
ACS800-02	400 to 500	R7-R8	+E202	+E210	+E210
	690	R7-R8	-	+E210	+E210
ACS800-07	400 to 500	R5-R8	+E202	+E210 / +E200 (R5 frame size)	+E210
		n×R8i	+E202 (up to 1000A)	standard	standard
	690	R5-R8	-	+E210 / +E200 (R5 frame size)	+E210
		n×R8i	-	standard	standard
ACS880-07LC	400 to 500	n×R8i	+E202 (up to 1000A)	standard	standard
	690	n×R8i	-	standard	standard
ACS800-17	400 to 500	R6	+E202	+E200	- *)
		R7i-n×R8i	+E202 (up to 1000 A)	standard	standard
	690	R7i-n×R8i	-	standard	standard
ACS800-17LC	400 to 500	R7i-n×R8i	+E202 (up to 1000 A)	standard	standard
	690	R7i-n×R8i	-	standard	standard
ACS800-37	400 to 500	R6	+E202	+E200	- *)
		R7i-n×R8i	+E202 (up to 1000 A)	standard	standard
	690	R7i-n×R8i	-	standard	standard
ACS800-37LC	400 to 500	R7i-n×R8i	+E202 (up to 1000 A)	standard	standard
	690	R7i-n×R8i	-	standard	standard

*) These drives are category C4 equipment and EMC plan for installation is required.

ABB sine filter solution

The ACS800 sine filter solution is an ACS800 industrial drive equipped with a sine filter. It enjoys most of the premium features of the standard ACS800 industrial drive. The LC filter suppresses the high frequency components of the output voltage.



This means that the output voltage waveform is almost sinusoidal without high voltage peaks.

Filters are available in IP00 degree of protection over the whole power range. The ACS800-01 power range has also IP23 filters available. The ACS800-07 sine filter drives are complete cabinet-built units.

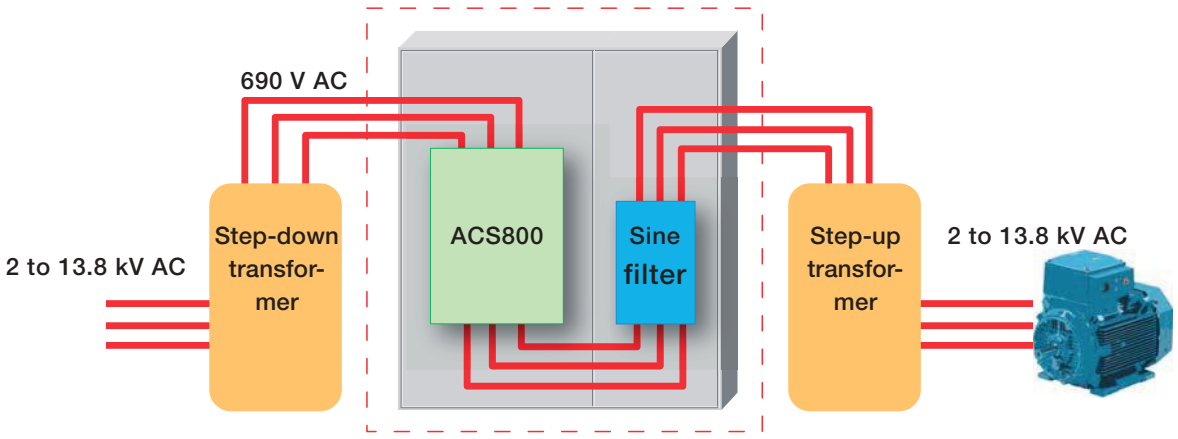
The ABB sine filter solution can be used in a variety of applications:

- Motor does not have adequate insulation for VSD duty
- Total motor cable length is long e.g. there are a number of parallel motors
- Step-up applications e.g. medium voltage motor needs to be driven
- Step-down applications
- There are industry specific requirements for peak voltage level and voltage rise time
- Motor noise needs to be reduced
- Maximum safety and reliability is needed in e.g. EX applications
- Submersible pumps with long motor cables e.g. in the oil industry

Main features

- Optimized LC design that takes into account switching frequency, voltage drop and filtering characteristics
- Proven technology as ABB has delivered hundreds of sine filter solutions over the last 20 years
- Cost effective solution
- Standard software has all the parameters that need to be set

Feature	Benefit	Note
Sinusoidal output voltage	No additional stress on the motor insulation: non-VSD compliant motors can be used, motor reliability and lifetime are maximized.	
	Allows the use of transformers in the drive output to match any required motor voltage.	Voltage drop at motor cable can be compensated with transformer i.e. there are no restrictions to motor cable length.
	Standard distribution transformer can be used in step-up solutions.	High starting torque is available with special transformer design.
	Less motor noise.	
AP programming, advanced IR-compensation and flux control	The effects of load changes to motor voltage can be compensated i.e. the motor always has the optimum voltage.	Scalar control is required with sine filters.



Sine filters
Types and ratings for ACS800-01/-02

$I_{cont.\ max}$ A	$P_{cont.\ max}$ kW	Noise level dB	Heat dissipation W	Air flow m^3/h	Type designation	Filter size	Enclosure class	Filter height mm	Filter width mm	Filter depth mm	Filter weight kg
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V.											
8.5	3	67	180	35 [1]	ACS800-01-0005-3	NSIN 0006-5	IP00/IP23	160/234	155/230	120/170	6/9
19	7.5	68	350	69 [1]	ACS800-01-0011-3	NSIN 0016-5	IP00/IP23	280/460	240/470	190/270	15/26
25	11	68	450	69 [1]	ACS800-01-0016-3	NSIN 0020-5	IP00/IP23	280/460	240/470	200/270	19/30
33	15	68	560	69 [1]	ACS800-01-0020-3	NSIN 0025-5	IP00/IP23	280/460	240/470	210/270	21/32
44	22	69	630	103 [1]	ACS800-01-0025-3	NSIN 0030-5	IP00/IP23	280/460	240/470	220/270	26/37
54	26	69	730	103 [1]	ACS800-01-0030-3	NSIN 0040-5	IP00/IP23	315/460	300/470	228/270	34/45
72	35	73	950	250 [1]	ACS800-01-0040-3	NSIN 0050-5	IP00/IP23	315/510	300/580	240/325	37/53
86	42	73	1100	250 [1]	ACS800-01-0050-3	NSIN 0060-5	IP00/IP23	320/510	300/580	270/325	53/69
102	52	73	1500	250 [1]	ACS800-01-0060-3	NSIN 0070-5	IP00/IP23	415/510	360/580	210/325	66/82
125	63	75	1800	250 [1]	ACS800-01-0075-3	NSIN 0100-5	IP00/IP23	415/620	360/700	225/425	69/99
164	84	75	2200	405 [2]	ACS800-01-0100-3	NSIN 0120-5	IP00/IP23	415/620	360/700	240/425	75/105
199	102	75	2700	405 [2]	ACS800-01-0120-3	NSIN 0140-5	IP00/IP23	450/620	400/700	500/525	120/165
225	110	79	3900	1105 [2]	ACS800-01-0135-3	NSIN 0315-6 [3]	IP00	2060	400	600	230
260	130	79	5500	1105 [2]	ACS800-01-0205-3	NSIN 0315-6 [3]	IP00	2060	400	600	230
206	100	79	4100	1240 [2]	ACS800-02-0140-3	NSIN 0315-6 [3]	IP00	2060	400	600	230
248	120	79	4900	1240 [2]	ACS800-02-0170-3	NSIN 0315-6 [3]	IP00	2060	400	600	230
266	130	79	5600	1240 [2]	ACS800-02-0210-3	NSIN 0315-6 [3]	IP00	2060	400	600	230
445	215	80	8800	1920 [2]	ACS800-02-0260-3	NSIN 0485-6 [3]	IP00	2060	400	600	250
521	250	80	9700	3220 [2]	ACS800-02-0320-3	NSIN 0900-6 [3]	IP00	2120	1000	600	690
602	295	80	11100	3220 [2]	ACS800-02-0400-3	NSIN 0900-6 [3]	IP00	2120	1000	600	690
693	340	80	12100	3220 [2]	ACS800-02-0440-3	NSIN 0900-6 [3]	IP00	2120	1000	600	690
720	350	80	12600	3220 [2]	ACS800-02-0490-3	NSIN 0900-6 [3]	IP00	2120	1000	600	690
U_N = 500 V (Range 380 to 500 V). The power ratings are valid at nominal voltage 500 V.											
8.1	4.4	67	200	35 [1]	ACS800-01-0006-5	NSIN 0006-5	IP00/IP23	160/234	155/230	120/170	6/9
19	11	68	440	69 [1]	ACS800-01-0016-5	NSIN 0016-5	IP00/IP23	280/460	240/470	190/270	15/26
25	15	68	550	69 [1]	ACS800-01-0020-5	NSIN 0020-5	IP00/IP23	280/460	240/470	200/270	19/30
33	20	68	600	69 [1]	ACS800-01-0025-5	NSIN 0025-5	IP00/IP23	280/460	240/470	210/270	21/32
42	26	69	700	103 [1]	ACS800-01-0030-5	NSIN 0030-5	IP00/IP23	280/460	240/470	220/270	26/37
47	29	69	900	103 [1]	ACS800-01-0040-5	NSIN 0040-5	IP00/IP23	315/460	300/470	228/270	34/45
65	40	73	1100	250 [1]	ACS800-01-0050-5	NSIN 0050-5	IP00/IP23	315/510	300/580	240/325	37/53
79	48	73	1300	250 [1]	ACS800-01-0060-5	NSIN 0060-5	IP00/IP23	320/510	300/580	270/325	53/69
94	60	73	1800	250 [1]	ACS800-01-0070-5	NSIN 0070-5	IP00/IP23	415/510	360/580	210/325	66/82
125	78	75	2500	250 [1]	ACS800-01-0105-5	NSIN 0100-5	IP00/IP23	415/620	360/700	225/425	69/99
155	99	75	2500	405 [2]	ACS800-01-0120-5	NSIN 0120-5	IP00/IP23	415/620	360/700	240/425	75/105
177	114	75	3500	405 [2]	ACS800-01-0140-5	NSIN 0140-5	IP00/IP23	450/620	400/700	500/525	120/165
225	137	79	4600	1105 [2]	ACS800-01-0165-5	NSIN 0315-6 [3]	IP00	2060	400	600	230
260	160	79	6100	1105 [2]	ACS800-01-0255-5	NSIN 0315-6 [3]	IP00	2060	400	600	230
196	125	79	4300	1240 [2]	ACS800-02-0170-5	NSIN 0315-6 [3]	IP00	2060	400	600	230
245	150	79	5400	1240 [2]	ACS800-02-0210-5	NSIN 0315-6 [3]	IP00	2060	400	600	230
258	160	79	6200	1240 [2]	ACS800-02-0260-5	NSIN 0315-6 [3]	IP00	2060	400	600	230
440	275	80	9600	1920 [2]	ACS800-02-0320-5	NSIN 0485-6 [3]	IP00	2060	400	600	250
515	320	80	11100	3220 [2]	ACS800-02-0400-5	NSIN 0900-6 [3]	IP00	2120	1000	600	690
550	345	80	11100	3220 [2]	ACS800-02-0440-5	NSIN 0900-6 [3]	IP00	2120	1000	600	690
602	375	80	11900	3220 [2]	ACS800-02-0490-5	NSIN 0900-6 [3]	IP00	2120	1000	600	690
684	430	80	13400	3220 [2]	ACS800-02-0550-5	NSIN 0900-6 [3]	IP00	2120	1000	600	690
700	440	80	14100	3220 [2]	ACS800-02-0610-5	NSIN 0900-6 [3]	IP00	2120	1000	600	690
U_N= 690 V (Range 525 to 690 V). The power ratings are valid at nominal voltage 690 V.											
13	10.6	67	400	103 [1]	ACS800-01-0011-7	NSIN 0011-7	IP00/IP23	280/460	240/470	190/270	20/31
17	14	67	460	103 [1]	ACS800-01-0016-7	NSIN 0020-7	IP00/IP23	280/460	240/470	220/270	26/37
22	18	68	560	103 [1]	ACS800-01-0020-7	NSIN 0020-7	IP00/IP23	280/460	240/470	220/270	26/37
25	21	68	650	103 [1]	ACS800-01-0025-7	NSIN 0025-7	IP00/IP23	320/510	300/580	222/325	35/51
31	26	69	740	103 [1]	ACS800-01-0030-7	NSIN 0040-7	IP00/IP23	320/510	300/580	235/325	40/56
34	29	70	820	103 [1]	ACS800-01-0040-7	NSIN 0040-7	IP00/IP23	320/510	300/580	235/325	40/56
48	40	73	1000	250 [1]	ACS800-01-0050-7	NSIN 0060-7	IP00/IP23	330/510	300/580	275/325	57/73
52	46	73	1200	250 [1]	ACS800-01-0060-7	NSIN 0060-7	IP00/IP23	330/510	300/580	275/325	57/73
79	69	75	1500	405 [2]	ACS800-01-0070-7	NSIN 0070-7	IP00/IP23	415/510	360/580	240/325	75/91
93	82	75	1900	405 [2]	ACS800-01-0100-7	NSIN 0120-7	IP00/IP23	415/620	360/700	225/425	69/99
104	92	75	2300	405 [2]	ACS800-01-0120-7	NSIN 0120-7	IP00/IP23	500/510	420/580	290/325	126/142
134	113	79	3800	1105 [2]	ACS800-01-0145-7	NSIN 0210-6 [3]	IP00	2060	400	600	250
148	125	79	4700	1105 [2]	ACS800-01-0175-7	NSIN 0210-6 [3]	IP00	2060	400	600	250
130	115	79	4000	1240 [2]	ACS800-02-0140-7	NSIN 0210-6 [3]	IP00	2060	400	600	250
142	125	79	4600	1240 [2]	ACS800-02-0170-7	NSIN 0210-6 [3]	IP00	2060	400	600	250
169	150	79	6000	1240 [2]	ACS800-02-0210-7	NSIN 0210-6 [3]	IP00	2060	400	600	250
315	280	80	9000	1920 [2]	ACS800-02-0320-7	NSIN 0485-6 [3]	IP00	2060	400	600	250
336	300	80	9700	1920 [2]	ACS800-02-0400-7	NSIN 0485-6 [3]	IP00	2060	400	600	250
367	330	80	10700	1920 [2]	ACS800-02-0440-7	NSIN 0485-6 [3]	IP00	2060	400	600	250
444	395	80	12300	1920 [2]	ACS800-02-0550-7	NSIN 0485-6 [3]	IP00	2060	400	600	250

Nominal ratings	
$I_{cont.max}$	Rated current of the drive-filter combination available continuously without overload at 40 °C
Typical ratings	
$P_{cont.max}$	Typical motor power

Notes: Noise level is a combined value for the drive and the filter. Heat dissipation is a combined value for the drive and the filter.

ACS800-11/-31/-17/-37: for sine filter selections and ratings, contact ABB.

[1] Air flow of the drive.
[2] Combined air flow of the drive and the filter.
[3] Dimensions are approximations for a cabinet that can house the filter. Weight is approximately the total weight of the cabinet and the filter. The filter assembly is supplied as loose items, which include choke modules, capacitors and cooling fan.

Sine filter drives
Types and ratings for ACS800-07

$I_{cont.\ max}$ A	$P_{cont.\ max}$ kW	Noise level dB	Heat dissipation kW	Air flow m^3/h	Type designation	Filter size	Total height mm	Total width mm	Total depth mm	Total weight kg
U_N = 400 V (Range 380 to 415 V). The power ratings are valid at nominal voltage 400 V.										
225	110	79	3.9	1105	ACS800-07-0135-3	NSIN 0315-6	2130	830	646	550
260	130	79	5.5	1105	ACS800-07-0205-3	NSIN 0315-6	2130	830	646	550
445	215	80	9	1920	ACS800-07-0260-3	NSIN 0485-6	2130	1230	646	800
521	250	80	10	3220	ACS800-07-0320-3	NSIN 0900-6	2130	1830	646	1200
602	295	80	11	3220	ACS800-07-0400-3	NSIN 0900-6	2130	1830	646	1200
693	340	80	12	3220	ACS800-07-0440-3	NSIN 0900-6	2130	1830	646	1200
720	350	80	13	3220	ACS800-07-0490-3	NSIN 0900-6	2130	1830	646	1200
879	430	81	17	5120	ACS800-07-0610-3	NSIN 1380-6	2130	2330	646	1700
1111	555	81	23	5840	ACS800-07-0770-3	NSIN 1380-6	2130	2630	646	2000
1255	630	81	25	5840	ACS800-07-0870-3	NSIN 1380-6	2130	2630	646	2000
1452	725	82	31	7840	ACS800-07-1030-3	2×NSIN 0900-6	2130	3830	646	2600
1770	885	82	36	9040	ACS800-07-1230-3	2×NSIN 1380-6	2130	4030	646	2600
2156	1080	82	46	9760	ACS800-07-1540-3	2×NSIN 1380-6	2130	4230	646	3100
2663	1330	83	56	12960	ACS800-07-1850-3	3×NSIN 1380-6	2130	5630	646	4200
U_N = 500 V (Range 380 to 500 V). The power ratings are valid at nominal voltage 500 V.										
225	137	79	4.6	1105	ACS800-07-0165-5	NSIN 0315-6	2130	830	646	550
260	160	79	6.1	1105	ACS800-07-0255-5	NSIN 0315-6	2130	830	646	550
440	275	80	10	1920	ACS800-07-0320-5	NSIN 0485-6	2130	1230	646	800
515	320	80	11	3220	ACS800-07-0400-5	NSIN 0900-6	2130	1830	646	1200
550	345	80	11	3220	ACS800-07-0440-5	NSIN 0900-6	2130	1830	646	1200
602	375	80	12	3220	ACS800-07-0490-5	NSIN 0900-6	2130	1830	646	1200
684	430	80	13	3220	ACS800-07-0550-5	NSIN 0900-6	2130	1830	646	1200
700	440	80	14	3220	ACS800-07-0610-5	NSIN 0900-6	2130	1830	646	1200
883	565	81	20	5120	ACS800-07-0760-5	NSIN 1380-6	2130	2330	646	1700
1050	675	81	24	5840	ACS800-07-0910-5	NSIN 1380-6	2130	2630	646	2000
1258	805	81	28	5840	ACS800-07-1090-5	NSIN 1380-6	2130	2630	646	2000
1372	880	82	33	7840	ACS800-07-1210-5	2×NSIN 0900-6	2130	3830	646	2600
1775	1135	82	41	9040	ACS800-07-1540-5	2×NSIN 1380-6	2130	4030	646	2600
2037	1305	82	48	9760	ACS800-07-1820-5	2×NSIN 1380-6	2130	4230	646	3100
2670	1710	83	63	12960	ACS800-07-2310-5	3×NSIN 1380-6	2130	5630	646	4200
U_N = 690 V (Range 525 to 690 V). The power ratings are valid at nominal voltage 690 V.										
134	113	79	3.8	1105	ACS800-07-0145-7	NSIN 0315-6	2130	830	646	550
148	125	79	4.7	1105	ACS800-07-0175-7	NSIN 0315-6	2130	830	646	550
315	280	80	9	1920	ACS800-07-0320-7	NSIN 0485-6	2130	1230	646	800
336	300	80	10	1920	ACS800-07-0400-7	NSIN 0485-6	2130	1230	646	800
367	330	80	11	1920	ACS800-07-0440-7	NSIN 0485-6	2130	1230	646	800
444	395	80	12	1920	ACS800-07-0550-7	NSIN 0485-6	2130	1230	646	800
628	575	81	20	5120	ACS800-07-0750-7	NSIN 0900-6	2130	2330	646	1600
729	665	81	24	5120	ACS800-07-0870-7	NSIN 0900-6	2130	2330	646	1600
885	810	81	27	5120	ACS800-07-1060-7	NSIN 1380-6	2130	2330	646	1700
953	870	81	30	5840	ACS800-07-1160-7	NSIN 1380-6	2130	2630	646	2000
1258	1150	82	39	9040	ACS800-07-1500-7	2×NSIN 0900-6	2130	4030	646	2800
1414	1290	82	45	9040	ACS800-07-1740-7	2×NSIN 0900-6	2130	4030	646	2800
1774	1620	82	56	10240	ACS800-07-2120-7	2×NSIN 1380-6	2130	4430	646	3200
1866	1705	82	60	10960	ACS800-07-2320-7	2×NSIN 1380-6	2130	4630	646	3400
2321	2070	83	72	14160	ACS800-07-2900-7	2×NSIN 1380-6	2130	5830	646	4300
2665	2435	83	82	15360	ACS800-07-3190-7	3×NSIN 1380-6	2130	6030	646	4500
2770	2530	83	89	16080	ACS800-07-3490-7	3×NSIN 1380-6	2130	6430	646	4800

Nominal ratings	
$I_{cont.max}$	Rated current of the drive-filter combination available continuously without overload at 40 °C
Typical ratings	
$P_{cont.max}$	Typical motor power

Notes: Dimensions apply to IP21 and bottom entry / exit.
ACS800-17/-37: for sine filter selections and ratings, contact ABB.

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 ACS800 hardware manuals.

Filter selection table for ACS800

Motor type	Nominal mains voltage (U_N)	Motor insulation requirement
ABB M2 and M3 motors	$U_N \leq 500$ V	Standard insulation system.
	500 V < $U_N \leq 600$ V	Standard insulation system in conjunction with du/dt filtering or reinforced insulation.
	600 V < $U_N \leq 690$ V	Reinforced insulation system in conjunction with du/dt filtering.
ABB form-wound HXR and AM motors	380 V < $U_N \leq 690$ V	Standard insulation system.
ABB random-wound HXR and AM motors	380 V < $U_N \leq 690$ V	Check motor insulation system with the motor manufacturer. du/dt filtering with voltages over 500 V.
Non-ABB random-wound and form-wound	$U_N \leq 420$ V	Insulation system must withstand $\hat{U}_{LL}$=1300 V.
	420 V < $U_N \leq 500$ V	If the insulation system withstands $\hat{U}_{LL}$=1600 V and Δt=0.2 µs, du/dt filtering is not required. With du/dt filtering, the insulation system must withstand $\hat{U}_{LL}$=1300 V.
	500 V < $U_N \leq 600$ V	If the insulation system withstands $\hat{U}_{LL}$=1800 V, du/dt filtering is not required.
		With du/dt filtering, the insulation system must withstand $\hat{U}_{LL}$=1600 V.
	600 V < $U_N \leq 690$ V	If the motor insulation system withstands $\hat{U}_{LL}$=2000 V and Δt=0.3 µs, du/dt filtering is not required. With du/dt filtering, the insulation system must withstand $\hat{U}_{LL}$=1800 V.

Symbol	Explanation
U_N	Nominal mains voltage.
$\hat{U}_{LL}$	Peak line to line voltage at motor terminals.
Δt	Rise time, i.e. interval during which line to line voltage at motor terminals changes from 10% to 90% of full voltage range.

External du/dt filters for ACS800-01/-02/-11/-31

ACS800			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	OCH0030-60	NOCH0070-60	NOCH0120-60 *)	NOCH0260-60 *)	FOCH0260-70	FOCH0320-50	FOCH0610-70	NOCH0016-62	NOCH0030-62	NOCH0070-62	NOCH0120-62	NOCH0016-65	NOCH0030-65	NOCH0070-65	NOCH0120-65
-0003-3																		
-0004-3	-0004-5																	
-0005-3	-0005-5																	
-0006-3	-0006-5		1								1				1			
-0009-3	-0009-5																	
-0011-3	-0011-5	-0011-7																
	-0016-5																	
-0016-3	-0020-5	-0016-7																
0020-3**)		-0020-7		1								1				1		
		-0025-7																
-11-0020-3*)	-0025-5	-0030-7																
-31-0020-3*)	-0030-5	-0040-7																
-0025-3	-0040-5	-0050-7																
-0030-3	-0050-5	-0060-7																
-0040-3	-0060-5				1								1				1	
-0050-3																		
-0060-3	-0070-5	-0070-7																
0070-3**)	0100-5**)	-0100-7				1								1				1
-0075-3	-0105-5	-0120-7																
-11-0070-3**)	-11-0100-5**)																	
-31-0070-3**)	-31-0100-5**)					1												
-0100-3	-0120-5					1												
-0120-3	-0140-5						1											
-0135-3	-0165-5	-0140-7																
-0140-3	-0170-5	-0145-7																
-0165-3	-0205-5																	
-0170-3	-0210-5	-0170-7						1										
-0205-3	-0255-5																	
-0210-3	-0260-5	-0175-7																
		-0205-7																
		-0210-7																
		-0260-7																
-0260-3	-0320-5								1									
-0320-3	-0400-5	-0320-7																
-0400-3	-0440-5	-0400-7																
-0440-3	-0490-5	-0440-7																
-0490-3	-0550-5	-0490-7								1								
	-0610-5	-0550-7																
		-0610-7																

**) Note the exceptions in
ACS800-11-0020-3, ACS800-11-0070-3 and ACS800-11-0100-5
ACS800-31-0020-3, ACS800-31-0070-3 and ACS800-31-0100-5

Applicability

Factory-installed du/dt filters are available for the ACS800-07/-07LC/-17/-17LC/-37/-37LC. They are installed inside the drive cabinet. Unprotected IP00 filters must be placed into an enclosure of adequate degree of protection.

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***	200	154	106	7
NOCH0120-62/65	765	308	256	45
NOCH0260-60***	383	185	111	12
FOCH0260-70	382	340	254	47
FOCH0320-50	662	319	293	65
FOCH0610-70	662	319	293	65

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

NOCH0016-60

NOCH0016-62

NOCH0016-65

FOCH0610-70

Standard user interface
Control panel

The industrial drive control panel has a multilingual alphanumeric display (4 lines × 20 characters) with plain text messages in 14 languages.

The control panel is removable and can be mounted on the drive enclosure or remotely.


```
1 L ->      1242.0 RPM 1
SPEED       1242.0 RPM
CURRENT     16.00 A
TORQUE      86.00 %
```

Startup assistant

```
MOTOR SETUP 4/10
MOTOR NOM CURRENT ?
(15.5 A)
ENTER: OK   RESET: BACK
```

Easy commissioning with the startup assistant in standard control program. The startup assistant actively guides you through the commissioning procedure step by step. It also has a unique on-line help function.

Actual value display

The control panel can display three separate actual values simultaneously.

Examples of these are:
- Motor speed
- Frequency
- Current
- Torque
- Power
- References
- DC bus voltage
- Output voltage
- Heatsink temperature
- Operating hours
- Kilowatt hours

Fault memory

```
1 L->       1242.0 RPM 1
2 LAST FAULT
OVERVOLTAGE
            1121 H  1 MIN
```

An built-in fault memory stores information relating to the latest 64 faults, each with a time stamp.

Parameter copying

```
1 L->       1242.0 RPM 1
UPLOAD      <= <=
DOWNLOAD    => =>
CONTRAST    4
```

The parameter copy feature allows all drive parameters to be copied from one frequency converter to another to simplify commissioning.

Centralised control

```
->  ->  <-  ->
 1   21  40  100
->
111
```

One panel can control up to 31 drives.

Easy programming

```
1 L ->    1242.0 RPM 1
11 REFERENCE SELECT
3 EXT REF 1 SELECT
AI1
```

Parameters are organised into groups for easy programming.

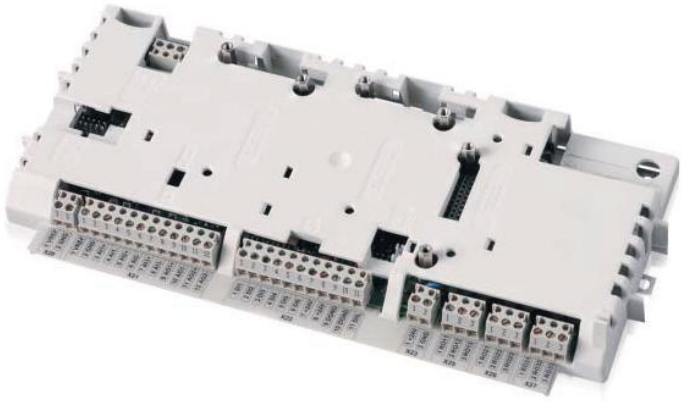
Standard user interface
Standard I/O

Analog and digital I/O channels are used for different functions such as control, monitoring and measurement purposes (e.g. motor temperature). In addition, optional I/O extension modules are available providing additional analog or digital I/O connections.

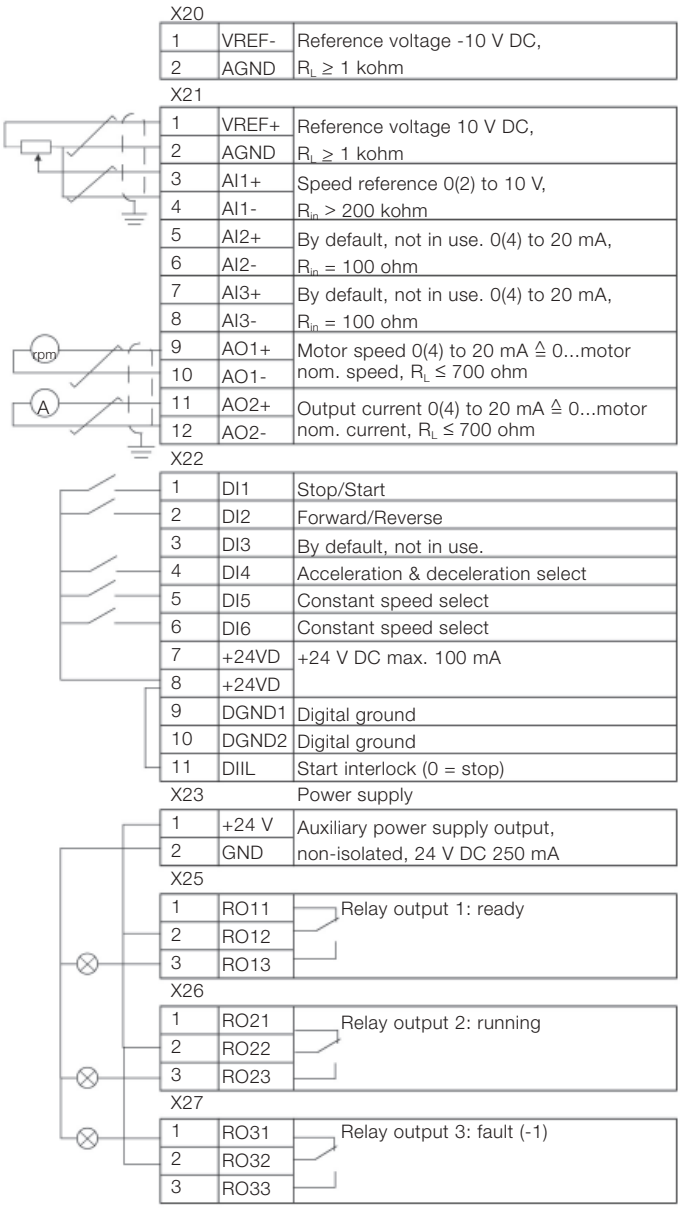
Below are the standard drive control I/O of the ABB industrial drive with Factory macro. For other ACS800 application macros and control programs the functions may be different.

Standard I/O on RMIO board

- 3 analog inputs: differential, common mode voltage ±15 V, galvanically isolated as a group
  - One ±0(2) to 10 V, resolution 12 bit
  - Two 0(4) to 20 mA, resolution 11 bit
- 2 analog outputs:
  - 0(4) to 20 mA, resolution 10 bit
- 7 digital inputs: galvanically isolated as a group (can be split in two groups)
  - Input voltage 24 V DC
  - Filtering (HW) time 1 ms
- 3 digital (relay) outputs:
  - Changeover contact
  - 24 V DC or 115/230 V AC
  - Max. continuous current 2 A
- Reference voltage output:
  - ±10 V ±0.5%, max. 10 mA
- Auxiliary power supply output:
  - +24 V ±10%, max. 250 mA



Control unit RDCU with RMIO inside



Options
Optional I/O

Standard I/O can be extended by using analog and digital extension modules or pulse encoder interface modules which are mounted in the slots on the ACS800 control board. The control board has two slots available for extension modules. More extension modules can be added with the I/O extension adapter which has three slots. The available number and combination of I/O's depends on the control software used. The standard application software supports 1 analog and 3 digital extension modules.

Optional I/O

Analog I/O extension module RAIO-01 (+L500)
- 2 analog inputs: galvanically isolated from 24 V supply and ground
  - ± 0(2) to 10 V, 0(4) to 20 mA or ± 0 to 2 V, resolution 12 bits
- 2 analog outputs: galvanically isolated from 24 V supply and ground
  - 0(4) to 20 mA, resolution 12 bits

Digital I/O extension module RDIO-01 (+L501)
- 3 digital inputs: individually galvanically isolated
  - Signal level 24 to 250 V or 115/230 V AC
- 2 relay (digital) outputs:
  - Changeover contact
  - 24 V DC or 115/230 V AC
  - Max. 2 A

Pulse encoder interface module RTAC-01 (+L502)
- 1 incremental encoder input:
  - Channels A, B and Z (zero pulse)
  - Signal level and power supply for the encoder is 24 or 15 V
  - Single ended or differential inputs
  - Maximum input frequency 200 kHz

Pulse encoder interface module RTAC-03 (+L517)
- 1 TTL incremental encoder input:
  - Channels A, B and Z (zero pulse)
  - Signal level and power supply for the encoder is 24 or 5.5 V
  - Differential inputs
  - Maximum input frequency 200 kHz

I/O extension adapter AIMA-01
- Three slots for I/O extension modules
- Connection to the ACS800 control board through optic link
- Dimensions: 78 × 325 × 28 mm
- Mounting: onto 35 × 7.5 mm DIN rail
- External power supply connection
- Supply voltage: 24 V DC ± 10%
- Current consumption: depends on connected I/O extension modules

Analog I/O extension module RAIO-01

Pulse encoder interface module RTAC-01

I/O extension adapter AIMA-01 with RDIO-01

Options
Fieldbus communication

ABB industrial drives have connectivity to major automation systems. This is achieved with a dedicated concept between the fieldbus systems and ABB drives.

The fieldbus adapter module can easily be mounted inside the drive. Because of the wide range of fieldbus adapter module offering you can freely select your communication protocol for the integration of automation system and ABB AC drives.

Manufacturing flexibility

Drive control
The drive control word (16 bit) provides a wide variety of functions from start, stop and reset to ramp generator control. Typical setpoint values such as speed, torque and position can be transmitted to the drive with 15 bit accuracy.

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

Drive diagnostics
Accurate and reliable diagnostic information can be obtained via the alarm, limit and fault words, reducing the drive downtime and therefore also the downtime of the manufacturing process.

Drive parameter handling
Total integration of the drives in the production process is achieved by single parameter read/write up to complete parameter set-up or download.

Reduced installation and engineering effort

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

Design
The use of fieldbus communication reduces engineering time at installation due to the modular structure of the hardware and software.

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

Fieldbus adapter modules

Option	Option code	Fieldbus protocol	Device profile	Baud rate
RCAN-01	+K457	CANopen®	Drives and motion control ABB Drives*)	10 kbit/s - 1 Mbit/s
RCNA-01	+K462	ControlNet	AC/DC drive ABB Drives*)	5 Mbit/s
RDNA-01	+K451	DeviceNet™	AC/DC drive ABB Drives*)	125 kbit/s - 500 kbit/s
RECA-01	+K469	EtherCAT®	Drive and motion control ABB Drives *)	100 Mbit/s
REPL-02	+K470	Ethernet PowerLink	Drive and motion control ABB Drives *)	100 Mbit/s
RETA-01	+K466	Ethernet IP, Modbus TCP	ABB Drives*), AC/DC drive ABB Drives*)	10 Mbit/s/ 100 Mbit/s
RETA-02	+K467	PROFINET IO, Modbus TCP	PROFIdrive ABB Drives*)	10 Mbit/s/ 100 Mbit/s
RLON-01	+K452	LonWorks®, LonTalk®	Variable speed motor drive	78 kbit/s
RMBA-01	+K458	Modbus RTU	ABB Drives*)	600 bit/s - 19.2 kbit/s
RPBA-01	+K454	PROFIBUS DP, DPV1	PROFIdrive ABB Drives*)	9.6 kbit/s - 12 Mbit/s
NIBA-01	+K453	InterBUS-S I/O, PCP	ABB Drives*)	500 kbit/s

*) Vendor specific profile

Options
Remote monitoring tool

Physically accessing operating drives can sometimes be challenging, especially when the drives are installed in remote locations. With the NETA-21 remote monitoring tool, accessing the drives to monitor and tune performance is as easy as using a computer or mobile device (such as a tablet or smartphone). NETA-21 provides access to the drives via Ethernet, ensuring easy and secure access to its web-based user interface. The Ethernet connection can be part of a local area network, wireless network, or internet network.

Monitor the process the way you want to

NETA-21 allows user to monitor and configure drive parameters, monitor runtime data, I/O communication, and energy consumption, to name a few of the features. Logging process and drive data allows for those processes to be tuned for optimal efficiencies. The NETA-21 remote monitoring tool provides the capability to log process data directly to its built-in SD card, or optionally, the data can be sent to a centralized database or external server.

The built-in alarm function provides additional assurance that if process variables shift outside of defined limits, that the NETA-21 will automatically notify maintenance crews. The alarms are recorded along with a time stamp to the SD memory card, further assisting maintenance with process troubleshooting.

Easy to use

The NETA-21's software can be updated locally or remotely as well, using a simple FTP connection. Connecting the NETA-21 to a DDCS network is simple using the optional NEXA-21 extension module. This module connects to the base of the NETA-21 and provides plug-and-play connectivity to DDCS network, allowing up to ten ACS800 drives to be connected to one NEXA-21 extension module. With this configuration, the DriveWindow startup and maintenance tool (v. 2.4) can be used to configure the connected drives via Ethernet connection.

NETA-21

Standard control program

Standard control program

Based on direct torque control technology, the ACS800 offers highly advanced features as standard. The ACS800 standard control program provides solutions to virtually all AC drives applications such as pumps, fans, extruders and conveyors to name few.

Adaptive programming

In addition to parameters, industrial drives have the possibility for function block programming as standard. Adaptive programming with 15 programmable function blocks makes it possible to replace e.g. relays or even a PLC in some applications. Adaptive programming can be done either by standard control panel or DriveAP, a user-friendly PC tool.

The standard application macros

The ACS800 features built-in, pre-programmed application macros for configuration of such parameters as inputs, outputs and signal processing.

- FACTORY SETTINGS for basic industrial applications
- HAND/AUTO CONTROL for local and remote operation
- PID CONTROL for closed loop processes
- SEQUENTIAL CONTROL for repetitive cycles
- TORQUE CONTROL for processes where torque control is required
- USER MACRO 1 & 2 for user's own parameter settings

Software features

A complete set of standard software features offers premium functionality and flexibility.

- Accurate speed control
- Accurate torque control without speed feedback
- Adaptive programming
- Automatic reset
- Automatic start
- Constant speeds
- Controlled torque at zero speed
- DC hold
- DC magnetizing
- Diagnostics
- Flux braking
- Flux optimization
- IR compensation
- Master/follower control
- Mechanical brake control
- Motor identification
- Parameter lock
- Power loss ride-through
- Process PID control
- Programmable I/O
- Scalar control
- Speed controller tuning
- Startup assistant
- Support for sine filter in the drive output
- Trim function
- User-selectable acceleration and deceleration ramps
- User adjustable load supervision/limitation

Pre-programmed protection functions

A wide range of features provides protection for the drive, motor and the process.

- Ambient temperature
- DC overvoltage
- DC undervoltage
- Drive temperature
- Input phase loss
- Overcurrent
- Power limits
- Short circuit

Programmable protection functions

- Adjustable power limits
- Control signal supervision
- Critical frequencies lock-out
- Current and torque limits
- Earth fault protection
- External fault
- Motor phase loss
- Motor stall protection
- Motor thermal protection
- Motor underload protection
- Panel loss

Optional control programs
Control solutions for different applications

ABB provides a set of ready-made control solutions for specific industrial drive applications. Such software adds application-dedicated features and protection without an external PLC - improving productivity and reducing costs. Function blocks are easy to program using the DriveAP PC tool.

Main advantages of ABB's control solutions
- Application-dedicated features
- Improved production
- No external PLC
- User-friendly
- Easy to use
- Energy savings
- Smooth power loss ride-through
- Reduced costs
- Adaptive protection

Multiblock control program
The multiblock control program has been specially designed for system integrators and local engineering because of its flexibility, easy programming, large number of I/O, master-follower link and fieldbus interfaces. Integrated into the drive control board there are over 200 function blocks on 3 time levels: 20 ms, 100 ms and 500 ms. These benefits mean that it is not always necessary to have separate PLC for drive and process control. Function blocks are easy to program using the DriveAP PC tool.

Extended I/O
An analog and digital I/O extension is typically installed on the AIMA-01 I/O extension adapters. Three extension modules can be installed on each I/O extension adapter. The maximum number of I/O connections is 62.

Motion control program
The motion control program is a cost-effective solution for precision positioning and synchronization. Intelligent integrated motion control functions and versatile controllability eliminate the need for an external motion controller, even in the most demanding applications, such as materials handling, packaging, printing and the plastics industry.

Motion control has four operating modes – speed, torque, positioning and synchronization – and also provides the possibility for switching online between two selected modes.

Pump control program
Incorporating all functions commonly required at pumping facilities, pump control program eliminates the need for an external PLC and can help to save energy, reduce downtime, and prevent pump jamming and pipeline blocking. It is easy-to-use software, designed to meet the needs of water and waste utilities, industrial plants and other pump users.

Application programming template
The application programming template is a simple, ready-made application that can easily be modified using a special function block programming tool. The application engineer can easily modify the time levels and insert new functions to control the I/O, start/stop commands, and references etc. This is the most flexible software product for tailor-made customer applications.

Winder and inline control
Winder and inline software products utilize the accurate speed and torque control of the drive in controlling product tension within a process by adjusting the speed or torque, based on the dancer or tension feedback. This precise control ensures high-quality handling of web material. The result is a straightforward, cost-effective solution in web handling applications. Winder control software supports adaptive programming with 15 blocks.

Rod pump and PCP/ESP pump control programs

These pump control program products have been specially developed in close cooperation with the oil industry for artificial oil lifting applications. The products not only increase the production and pump efficiency, but also reduce the stress on the complete pump system. The benefits provided include enhanced equipment protection, optimised fluid production, and overall improvement of system performance.

Permanent magnet synchronous motor (PMSM) control program

This control program is available with standard and system control programs. The motor control program is specially made for permanent magnet low-speed – high-torque motors. This offers precise and reliable control at low speed without speed feedback. Permanent magnet control program supports adaptive programming with 15 blocks using standard program and 26 with the system program.

Centrifuge control

Practical programmable sequences for conventional centrifuges. Integrated decanter control for the accurate speed difference control of two shafts, where direct communication via the fibre optic link between bowl and scroll is used.

Crane control program

This control program is designed for different kinds of crane motions - mainly for hoist, trolley and long travel motions.

The ABB crane control program is a flexible control platform, which enables a wide range of connectivity for start, stop and reference logic. Adaptive programming with 15 blocks gives additional flexibility for tailor-made modifications outside the ready-made parameter structure. This is like having a small PLC inside the drive.

Reliable, integrated brake control logic for smooth open and close logic without jerks improves operational safety and performance. Brake acknowledge, torque memory and pre-magnetisations are the key software elements that ensure reliable control.

Different functions as standard increase the safety level of the crane. These include integrated speed match, speed monitor, fast stop, slowdown and end limit logic.

The master-follower logic for up to five motors enables common drum or separate motors with load sharing, or with separate drums and separate motors with shaft synchro control. Fast switchover logic between stand-alone and master-follower

logic increases the operational productivity. Internal homing control logic for position-controlled cranes can also be done with ready-made parameters. The position measurement enables position actual signals in millimeters for further logic.

The load speed control enables optimization of the hoist speed for different loads.

The integrated service counters for maintenance logic enable the different counters to provide information.

An easy-to-use, ready-made solution specifically for cranes.

Crane drive control program

A crane drive control with optimal operational safety and performance built into the drive.

- A fixed, standard and ready-made crane application for different crane applications such as harbor cranes.
- Optimal operational safety and performance built into the drive.
- Ready-to-use with proven crane functionality.
- Available as single-drive or multi-drive with dynamic and regenerative braking.
- Standard, ready-to-use crane solution.

Optional control programs
Control solutions for different applications

Master/follower control
Reliable control via the fibre optic link of several drives controlled by one master. This is needed if the motor shafts are coupled together, for example. The master/follower function enables the load to be evenly distributed between the drives.

Spinning control & traverse control program
Spinning control and traverse control program make a perfect pair for the precise control of spinning and traverse drives in textile machines.

System control program
This control program is aimed at multi-motor machines producing or processing metal, paper, plastics, textile, rubber and cement, and for numerous other demanding applications. Fast communication with the overriding controller can exchange operative data (references, command words) and support data (configuration data, diagnostics). Proprietary (DDCS, Drive bus) and generic (PROFIBUS, InterBUS-S, DeviceNet) protocols enable linking of drives to controllers, PLC and PCs.

Winch control program
ABB industrial drives with winch control program replace traditional and costly hydraulic winch controllers, thereby eliminating high maintenance costs and performance inefficiencies, while improving operator and overall system reliability.

The electrical interface can be traditional I/O based or fieldbus gateways from an overriding PLC and can be used to control the winch directly from control stands located on the port, starboard and upper deck of the vessel.

Anchor control provides stepless speed control of the anchor whether is being raised or lowered.

The tension within the mooring ropes can be controlled either manually (hand-mooring) or automatically (auto-mooring) by automooring sequence.

Ro-Ro quarter ramp control logic is for lifting or lowering the gate ramp, with protection to slowdown the speed and torque before closing the gate ramp in the upper end position.

DriveSize

Dimensioning tool

DriveSize is designed to help select the optimal motor, drive and transformer for the application. Based on user supplied data, the tool calculates and suggests which drive and motors to use. Additionally, the tool can be used to compute currents, network harmonics, and to create documents about dimensioning based on the load data provided. DriveSize uses the technical specifications contained in the ABB motor and drive catalogs.

DriveSize provides default values that can be changed by the user, and provides different options for drive selection. Shortcut keys can be used to quickly navigate around the tool.

Motors, drives, and transformers

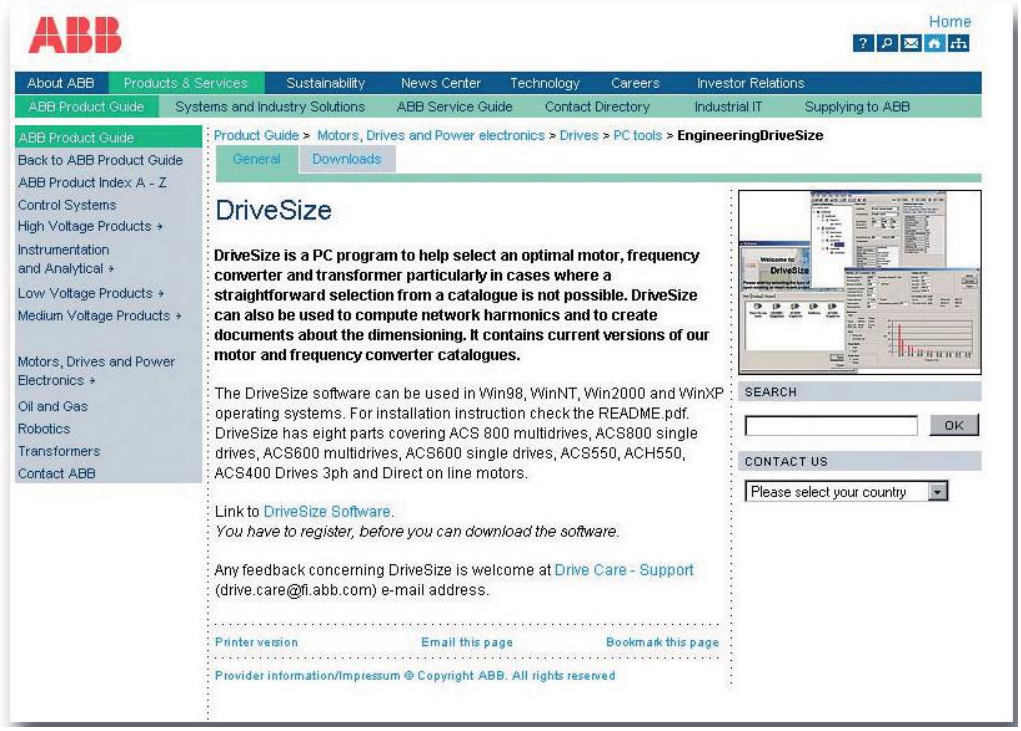
DriveSize can accommodate technical information for the following:

- 3-phase standard, customized, EX, and user defined motors
- ABB low voltage AC drives
- Transformers

Highlights

- Select optimal motor, drive, and transformer
- Calculate network harmonics for a single supply unit, or the whole system
- Import user defined motor database
- View dimensioning results graphically and numerically
- Print and save results

DriveSize can be downloaded free from www.abb.com/drives. Follow the PC Tools link.



DriveWindow

Startup and maintenance tool

A tool for the entire life cycle DriveWindow is designed to support the daily operation of ABB low voltage industrial drives. The tool provides users with capabilities to view, edit, and set drive parameters, as well as advanced functions like drive backup and data logger views. DriveWindow connects to drives using a disturbance free high speed fiber optic network.

Drive startup and maintenance

DriveWindow is used to configure drive parameters during drive commissioning. Drive parameter configuration files can be saved and used to commission new drives or kept as backups. DriveWindow provides a complete listing of the drive parameters and their corresponding values allowing users to view and edit individual parameters. Using the built-in data and fault loggers, users are able to monitor signals and real-time status of the drive. This data can be used for graphical trending of the drive's performance. The data and fault loggers come with functions allowing users to process the data.

PC based drive control

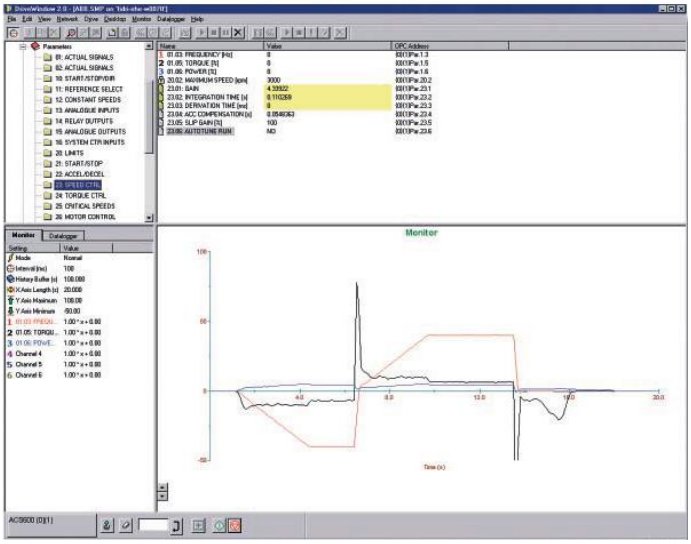
DriveWindow provides a built-in drive control panel allowing users to start, stop, set the direction, speed, and torque reference values of the connected drive.

High speed data access

High speed connections between DriveWindow and drives via the DDCS fiber optic network can be made. The fast access enables oscilloscope-like functionality in the data logger view, where drive information can be viewed graphically and also saved to file.

Highlights

- View and set drive parameters
- Monitor drive signals, graphically and numerically
- Use high speed data connection to the drive
- Save and compare drive configuration files
- Control the drive using the built-in control panel
- Tune the drives performance
- OPC server



DriveAP

Programming tool

DriveAP is a programming tool for creating, editing and documenting adaptive and multi-block programs. Fifteen function blocks are available for adaptive programming, and over 200 function blocks as well as PROFIBUS and drives I/O blocks may be edited using multi-block programming.

DriveAP supports IEC 61131 and only requires users to have a basic knowledge of block programming in order to use the tool. No special programming knowledge is needed.

Adaptive programs are easy to document either as printed copies or as stored files on the PC.

Operating modes

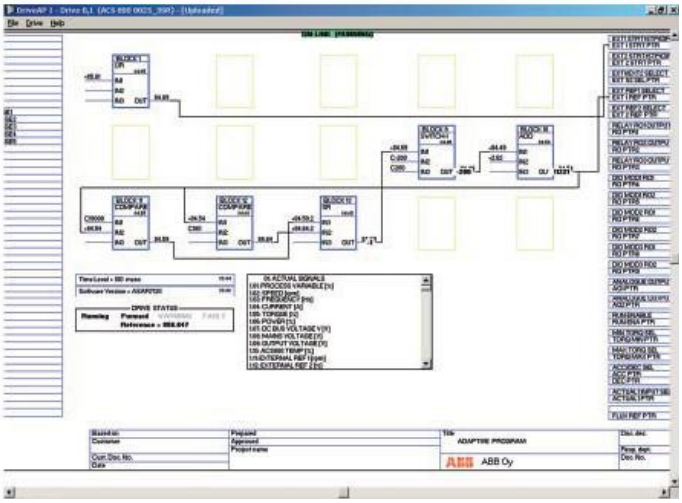
Stand-alone mode, DriveAP is not connected to a drive. The adaptive programming and multi-block programming can be done in the office and later downloaded to the drive.

Off-line mode, DriveAP is connected to a drive. The adaptive programming and multi-block programming can be carried out in batch mode.

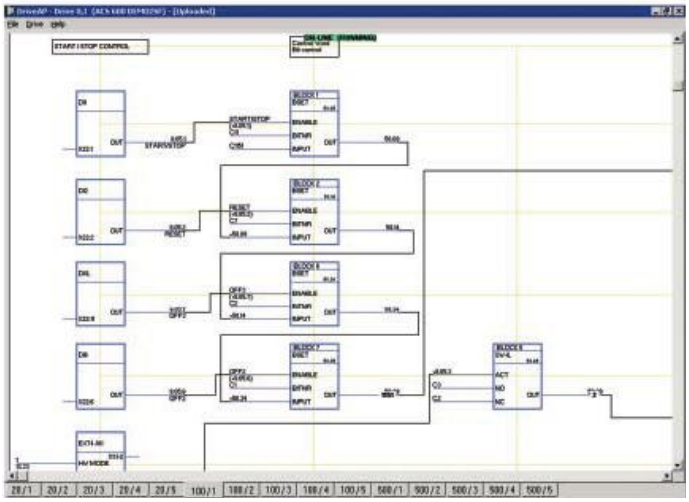
On-line mode, DriveAP is connected to a drive. Changes to the adaptive or multi-block programs are written immediately to the drive and the actual values are shown on the screen in real-time.

DriveAP featues

- Create and modify adaptive programs
- Create and modify multi-block programs
- Document programs
- Read existing program from the drive
- Stand-alone mode
- Off-line mode
- On-line mode



DriveAP with adaptive program of standard application.



DriveAP with multiblock programming application.

DriveAnalyzer

Startup and maintenance tool

DriveAnalyzer is a PC tool designed to perform analysis on ABB industrial single drive's performance. The results of the analysis can be used to help tune the drive to achieve better efficiencies and performance of the driven process.

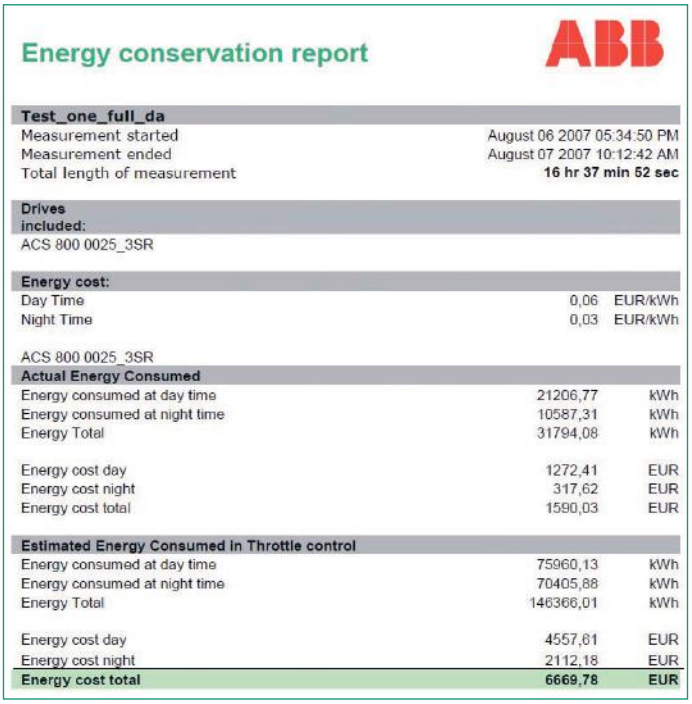
Motor mechanical loads and performance data is recorded by DriveAnalyzer as the basis for the analysis. The tool is not a fault diagnosis tool, it is designed to work with operational drives using the standard control or system control programs. Drive data is collected over time enabling duration graphing and longer run time analysis.

DriveAnlayzer connects to multiple drives collecting data on the network supply which can be used by engineers to ensure the power supply network is optimized for the driven process.

DriveAnalyzer collects data on mechanical power, torque, rotational speed, energy use (kWh), currents, frequency, electrical power, temperatures, the status word, peak value logger information and amplitude logger information.

Highlights

- Motor and drive utilization
- Motor shaft load shape and duration plots
- Machine load behavior analysis
- Power supply and network analysis
- Energy savings analysis
- Read and show peak values
- Read and show amplitude logger registers
- Export results and reports to spreadsheets



Energy conservation report

ABB

Test_one_full_da		
Measurement started	August 06 2007 05:34:50 PM	
Measurement ended	August 07 2007 10:12:42 AM	
Total length of measurement	**16 hr 37 min 52 sec**	
Drives included:		
ACS 800 0025_3SR		
Energy cost:		
Day Time	0,06	EUR/kWh
Night Time	0,03	EUR/kWh
ACS 800 0025_3SR		
Actual Energy Consumed		
Energy consumed at day time	21206,77	kWh
Energy consumed at night time	10587,31	kWh
Energy Total	31794,08	kWh
Energy cost day	1272,41	EUR
Energy cost night	317,62	EUR
Energy cost total	1590,03	EUR
Estimated Energy Consumed in Throttle control		
Energy consumed at day time	75960,13	kWh
Energy consumed at night time	70405,88	kWh
Energy Total	146366,01	kWh
Energy cost day	4557,61	EUR
Energy cost night	2112,18	EUR
Energy cost total	**6669,78**	**EUR**

DriveAnalyzer energy conservation report.

DriveOPC

Integration tool

DriveOPC is a software package which allows OLE for Process Control (OPC) communication between Windows applications and ABB industrial drives. It allows Object Linking and Embedding (OLE) for Process Control (OPC) communication. This OPC server is an ideal tool for integrating ABB industrial drives and commercial PC software, and creating PC based control and monitoring systems.

Remote monitoring

DriveOPC enables remote connection over LAN (local area networks). The remote PC can be connected through its IP address (e.g. “164.12.43.33”) or by the DNS name (e.g. “Gitas213”).

OPC based software

OPC is an industry standard created in cooperation with Microsoft. It is an open architecture interface design, managed by the international OPC foundation. OPC is meant for different kinds of factory automation. DriveOPC is based on the OPC foundation data access standard 1.0A and Microsoft COM/DCOM technology. DriveOPC has full access to all drives, even when remote connection over LAN is used.

High speed communication

DriveOPC uses the DDCS communication protocol on a high-speed fibre optic network, enabling very fast communication between the PC and drives. The fibre optic network is safe and highly immune to external disturbances. The fibre optic network is connected to the PC using either a USB or communication card adapter.

DriveOPC features

– DriveOPC supports OPC’s data access 1.0A.

Read access to:
– Drive status: local, running, direction, fault, warning, reference
– Signals and parameters
– Fault logger contents
– Event logger contents
– General drive information
– Data logger settings, status and contents

Write access to:
– Drive control: local, start, stop, forward, reverse, coast stop, reset fault, home, teach-in, contactor on/off, reference
– Parameters
– Fault logger clear
– Data logger init, start, trig, clear

Summary of features and options

Power and voltage range	Ordering code	-01	-11	-31	-02	-07 R5-R8	-07 nxR8i	-07LC 19)	-17 R6-R8i	-17 nxR8i	-17LC 19) R7i-R8i	-17LC 19) nxR8i	-37 R6-R8i	-37 nxR8i	-37LC 19) R7i-R8i	-37LC 19) nxR8i
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
230 V		0.55-55	5.5-45	5.5-45	45-200											
400 V		1.1-160	11-90	11-90	90-400	45-400	400-1400	200-2800	45-400	355-1600	55-500	500-2800	45-400	355-1600	55-560	500-2800
500 V		1.5-200	15-110	15-110	110-500	55-500	500-1900	250-3360	55-500	450-1800	55-560	630-3200	55-500	450-1800	55-560	630-3200
690 V		5.5-160	37-90	37-90	90-560	45-560	500-2800	400-5600	37-450	450-2500	75-560	630-5200	37-450	450-2800	75-560	630-5200
Mounting																
Wall mounting		●	●	●	-	-	-	-	-	-	-	-	-	-	-	-
Free-standing		-	-	-	●	●	●	●	●	●	●	●	●	●	●	●
Two mounting directions: bookshelf / flat (=sideways)		-	-	-	●	-	-	-	-	-	-	-	-	-	-	-
Cabling																
Bottom entry and exit		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Top entry and exit	H351+ H353	-	-	-	-	□	□ 1)	□	□	□	□	□	□	□	□	□
Degree of protection																
IP21 (UL type 1)		●	●	●	●	●	●	-	●	●	-	-	●	●	-	-
IP22 (UL type 1)	B053	-	-	-	-	□	□	-	□	□	-	-	□	□	-	-
IP42 (UL type 1)	B054	-	-	-	-	□	□	●	□	□	●	●	□	□	●	●
IP54 (UL type 12)	B055	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
IP54R	B059	-	-	-	-	□	□	-	□	□	-	-	□	□	-	-
IP55 (UL type 12)	B056	□	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DTC motor control																
DTC		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Software 2)																
Startup assistant		● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)
Adaptive programming		● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)	● 3)
Optional software optimized for different applications or for enhanced programmability: for more details see section "Application software and programming"		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Control panel																
Alphanumeric 4*20 character control panel		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Control connections (I/O) and communications																
3 pcs analog inputs, programmable, galvanically isolated		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
2 pcs analog outputs, programmable		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
7 pcs digital inputs, programmable, galvanically isolated - can be divided into two groups		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
3 pcs relay outputs, programmable		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Thermistor relay (1 or 2 pcs)	L505	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Pt100 relays	L506	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Possibility for external control voltage		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Built-in I/O extension and speed feedback modules: for more details see section "Control connections and communications"		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Built-in adapters for several fieldbuses: for more details see section "Control connections and communications"		□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
EMC filters																
EMC 1st environment (category C2)	E202	□ 4)	□	□	□ 4)	□ 4)	□ 5)	□ 5)	□ 4)	□ 5)	□ 4)	-	□ 4)	□ 5)	□ 4)	-
EMC 2nd environment, earthed networks only (category C3)	E200	□ 6)	□	□	-	-	-	-	□ 7)	-	-	-	□ 7)	-	-	-
EMC 2nd environment, earthed and unearthed networks (category C3)	E210	□ 8)	-	-	□	□ 9)	●	●	● 10)	●	●	●	● 10)	●	●	●
Line filter																
AC or DC choke		●	-	-	●	●	●	●	-	-	-	-	-	-	-	-
LCL		-	●	●	-	-	-	-	●	●	●	●	●	●	●	●
Output filters																
Common mode filter	E208	-	-	-	□	□ 10)	●	●	□ 10)	●	●	●	□ 10)	●	●	●
du/dt filters	E205	X	X	X	X	□	●	●	□	●	● 17)	●	□	●	● 17)	●

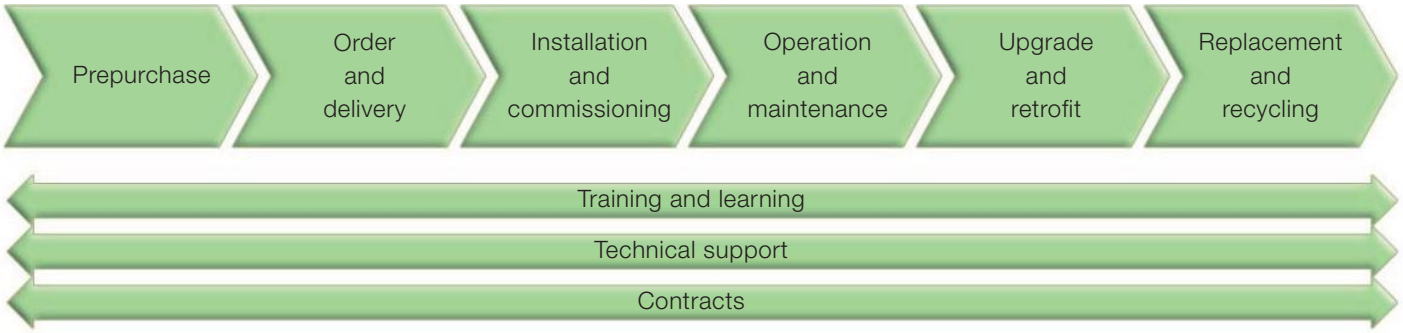
Summary of features and options

Power and voltage range	Ordering code	-01	-11	-31	-02	-07 R5-R8	-07 nxR8i	-07LC 19)	-17 R6-R8i	-17 n×R8i	-17LC 19) R7i-R8i	-17LC 19) n×R8i	-37 R6-R8i	-37 n×R8i	-37LC 19) R7i-R8i	-37LC 19) n×R8i
		kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
230 V		0.55-55	5.5-45	5.5-45	45-200											
400 V		1.1-160	11-90	11-90	90-400	45-400	400-1400	200-2800	45-400	355-1600	55-500	500-2800	45-400	355-1600	55-560	500-2800
500 V		1.5-200	15-110	15-110	110-500	55-500	500-1900	250-3360	55-500	450-1800	55-560	630-3200	55-500	450-1800	55-560	630-3200
690 V		5.5-160	37-90	37-90	90-560	45-560	500-2800	400-5600	37-450	450-2500	75-560	630-5200	37-450	450-2800	75-560	630-5200
Braking																
Brake chopper	D150	□ 11)	-	X	□	□	□	□	-	-	□	□	□	□	□	□
Brake resistor	D151	X	-	X	X	□ 12)	□ 12)	□ 12)	-	-	□	□	□ 12)	□ 12)	□	□
High power brake unit		-	-	-	-	-	-	X	-	-	X	X	-	-	X	X
Regenerative braking		-	●	-	-	-	-	-	●	●	●	●	-	-	-	-
Rectifier bridge																
12-pulse	A004	-	-	-	-	-	□ 13)	● 14)	-	-	-	-	-	-	-	-
Line side apparatus																
aR line fuses	F260	-	-	-	-	●	-	●	●	●	●	●	●	●	●	●
gG line fuses	F251	-	-	-	-	□	-	-	-	-	-	-	-	-	-	-
aR line fuses + main switch and input terminal cubicle	F253 + F260	-	-	-	-	-	□	-	-	-	-	-	-	-	-	-
Main switch		-	-	-	-	●	●	□	●	●	●	●	●	●	●	●
Line contactor	F250	-	-	-	-	□	□	□	●	-	●	-	●	-	●	-
Line contactor without emergency stop		-	-	-	-	-	-	□	●	-	-	-	●	-	-	-
Air circuit breaker	F255	-	-	-	-	-	□	□	-	●	-	-	-	●	-	-
Air circuit breaker		-	-	-	-	-	-	□	-	●	-	●	-	●	-	●
Earthing switch	F259	-	-	-	-	-	□	□	-	□	-	□	-	□	-	□
Cabinet options																
Control voltage 115 V AC	G304	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Control voltage 230 V AC	G307	-	-	-	-	●	●	●	●	●	●	●	●	●	●	●
Cabinet heater (ext. supply)	G300	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Output for motor heater (ext. supply)	G313	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Customized options	P902	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Safety options																
Prevention of unexpected startup	Q950	▲	▲	-	-	□	□	□	□	□	□	□	□	□	□	□
Safe torque-off	Q967	▲	▲	▲	-	-	-	-	-	-	-	-	-	-	-	-
Safe torque-off with safety relays	Q968	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Emergency stop, category 0 with opening the main contactor/breaker 20)	Q951	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Emergency stop, category 1 with opening the main contactor/breaker 20)	Q952	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Emergency stop, category 0 without opening the main contactor/breaker	Q963	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Emergency stop, category 1 without opening the main contactor/breaker	Q964	-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Earth fault monitoring, earthed mains		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Earth fault monitoring, unearthed mains		-	-	-	-	□	□	□	□	□	□	□	□	□	□	□
Approvals																
CE		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
UL, cUL, CSA		● 15)	● 15)	● 15)	●	□	□	□	□	□	□	□	□	□	□	□
GOST R		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
C-Tick		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Marine design		□ 16)	-	-	-	□	□	□ 18)	□	□	□ 18)	□ 18)	□	□	□ 18)	□ 18)

● Standard
□ Selectable option, built-in
▲ Selectable option, external, plus code
X Selectable option, external, no plus code
- Not available

1) IP54 or IP54R require line fuses and load switch F253 + F260.
2) Software compatibility with different option modules. Please contact ABB
3) Only in standard software.
4) Not for 690 V.
5) Only 07-0610-3, 07-0760-5, 17-0640-3, 17-0770-3, 17-0780-5, 17-0870-5, 37-0640-3, 37-0770-3, 37-0780-5, 37-0870-5, 07LC-0390-3, 07LC-0470-3, 07LC-0620-3, 07LC-0470-5, 07LC-0550-5, 07LC-0730-5.
6) Frame sizes R2 to R5. Note frame size R6: +E210.
7) Option for R6, built-in in other frame sizes
8) R6 frame size only.
9) R5 frame size: +E200
10) Not available for R5 and small R6 types.
11) Standard in ACS800-01 frame sizes R2 and R3 and at 690 V also in R4.
12) Not available as IP54 or IP54R, or with C129 (UL approved version of the frame sizes R6 - R8 ACS800-07/ -17/ -37).
13) Basic unit without line fuses and load switch can be connected to 6- or 12- pulse operation.
14) Available in n×D4 frame size DSU, 07LC-0760-3, 07LC-0930-5, 07LC-1370-7 and bigger types.
15) UL-type 1 only.
16) Marine type approval for ACS800-01 (ABS, Bureau Veritas, DNV, GL, Lloyd's and RINA) with option +C132.
17) Standard in R8i, option for R7i.
18) Marine type approval for ACS800-X7LC (ABS, DNV, Lloyd's).
19) LCU is an option for all LC single drives. For dimensions see p. 27.

Expertise at every stage of the value chain



Whether you operate in industry, commerce or a utility your aims remain the same: to keep your motor-driven applications running consistently and efficiently. The life cycle services for ABB drives can help you achieve these aims by maximizing the uptime of your process while ensuring the optimum lifetime of ABB drives in a predictable, safe and low-cost manner.

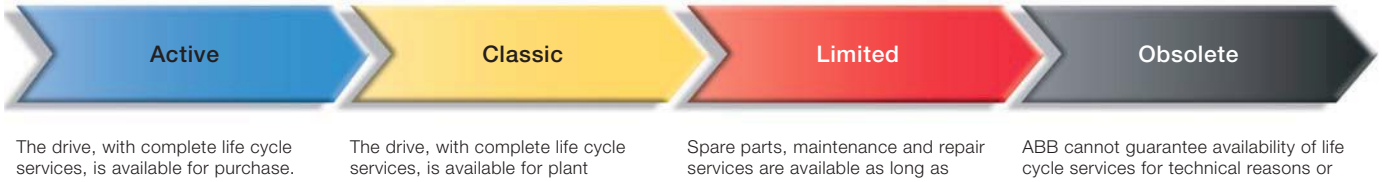
The life cycle services for ABB drives span the entire value chain, from the moment you make the first enquiry about a drive through to its disposal and recycling. Throughout the value chain, ABB provides training and learning, technical support and contracts. All of this is supported by one of the most extensive global drive sales and service networks.

Secure uptime throughout the drive life cycle

ABB follows a four-phase model for the life cycle management 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.

The four-phase drive life cycle management model provides you with a transparent method for managing your investment in drives. In each phase, you 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



Active	Classic	Limited	Obsolete
The drive, with complete life cycle services, is available for purchase.	The drive, with complete life cycle services, is available for plant extensions.	Spare parts, maintenance and repair services are available as long as materials can be obtained.	ABB cannot guarantee availability of life cycle services for technical reasons or within reasonable cost.

Complete life cycle services — **Limited life cycle services**

To ensure the availability of complete life cycle services, a drive must be in the active or classic phase. A drive can be kept in the active or classic phase by upgrading, retrofitting or replacing.

Caution! A drive entering the limited or obsolete phase has limited repair options. This may result in unpredictable process downtime. To avoid this possibility, the drive should be kept in the active or classic phase.

Notes

Contact us

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

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

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