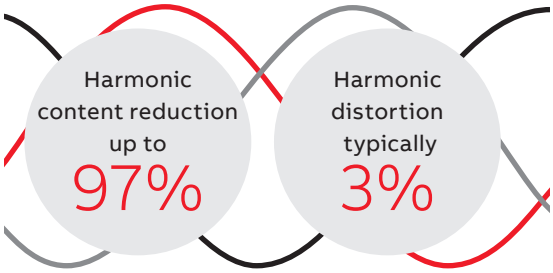
ПРОМЫШЛЕННЫЕ ПРИВОДЫ
Техническое описание на преобразователи ACS880-37, ACS880-37LC

Ultra-low harmonic drives4

ACS880-37

Harmonic distortions can disturb or even damage sensitive equipment connected in the same environment. Harmonics also cause additional losses in the network.

Clean supply network
The drive produces exceptionally low harmonic content and exceeds the requirements of harmonic guidance/standards such as IEEE 519, IEC61000-3-2, IEC61000-3-12, IEC61000-3-4 and G5/4. Compared to a conventional drive, the harmonic content is reduced by up to 97%.
The total harmonic current distortion is typically <3% in a nominal situation and an undistorted network. A common DC solution introduces a cost-efficient way of keeping the supply network clean in an installation of multiple drives.



Keeps the network clean

Minimized downtime
The ACS880 ultra-low harmonic drive offers immunity to network disturbances. The drive will not interrupt the process or affect its quality in unstable supply network conditions. The drive's active supply unit can boost the output voltage to enable full motor voltage, even when the supply voltage is below nominal. This ensures reliable operation in weak networks. This voltage boost capability can also be utilized to overcome voltage drops caused by long supply or motor cables. The possibility to stabilize the output voltage of the drive is an advantage compared to alternative low harmonic solutions where voltage cannot be boosted.

Optimized cost and space
The compact drive features built-in harmonics mitigation. This includes an active supply unit and a low harmonic line filter. As there is no need for external filters, multi-pulse arrangements or special transformers, the simple installation offers significant space, time and cost savings.

As there is less risk of overheating with lower harmonic currents, there is no need to over-dimension equipment such as transformers and cables. The drive's voltage boost capability can be an advantage in motor dimensioning. With a higher motor voltage, the same power is achieved with a lower current, which improves motor efficiency and may allow a smaller motor to be used.

Maximized motor performance and efficiency4
The drive can provide full motor voltage even if the supply voltage fluctuates. It features direct torque control (DTC) as standard, making it suitable for very demanding applications as well. DTC provides precise speed and torque control for maximum motor performance and motor efficiency.

Reduces the total cost of ownership

Efficient energy utilization
The ACS880 ultra-low harmonic drives achieve a unity power factor, indicating that electrical energy is being used efficiently.

The drive offers the possibility for network power factor correction to compensate for the low power factors of equipment connected to the same network. It can help to avoid penalty charges set by electrical utilities for poor power factors.

Lower harmonics and full motor voltage at all times mean reduced system losses and better overall system efficiency.

Wall-mounted ultra-low harmonic drives, ACS880-31

- Power ratings: 2.2 to 110 kW
- Enclosure classes: IP20 for cabinet mounting, IP21 (as standard) for wall-mounting and IP55 for dusty and wet environments

Main options:

- Flange mounting
- C2 and C3 EMC filters, see page 73
- I/O extension modules, see page 63
- Communication protocol adapters, see page 58
- Speed feedback interfaces, see page 65
- Functional safety modules, see page 70
- Remote monitoring tool, see page 66
- Application-specific software, see page 20
- Du/dt filters, see page 90
- Sine filters, see page 76

Cabinet-built ultra-low harmonic drives, ACS880-37

- Power ratings: 45 to 3200 kW
- Enclosure classes: IP22 (as standard), IP42 and IP54 for different environments, with option for air intake through bottom of the cabinet and channeled air outlet on the top of the cabinet

Main options:

- EMC filters, see page 65 (as standard for nxR8i)
- Cabling solutions for bottom and top entry and exit
- Functional safety modules, see page 70
- I/O extension modules, see page 63
- Communication protocol adapters, see page 63
- Speed feedback interfaces, see page 65
- Du/dt and common mode filter options for motor protection, see page 90
- Marine construction option
- Cabinet light and heater option

The drives have an extensive selection of built-in features and options. See page 100.

Highlights

- The total harmonic current distortion is typically <3% in nominal situation and undistorted network. Low harmonic content also at partial loads
- “All inside” design: no need for external filters, multi-pulse arrangements or special transformers
- Simple and cost-effective installation
- Unity power factor. Possibility for network power factor correction
- Small installation footprint
- Output voltage stabilization secures operation in weak networks
- DC voltage boost to compensate for a voltage drop caused by an output filter or long motor cables, and to ensure full motor supply voltage
- Increased system efficiency with lower component losses due to very low level of harmonics

Ratings, types and voltages

Cabinet-built ultra-low harmonic drives, ACS880-37

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

Drive type	Frame size	Nominal ratings			Light overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow
		I_N (A)	I_{MAX} (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	(dB(A))	(W)	(m³/h)
ACS880-37-0105A-3	R8	105	148	55	100	55	87	45	70	2200	860
ACS880-37-0145A-3	R8	145	178	75	138	75	105	55	70	3300	860
ACS880-37-0169A-3	R8	169	247	90	161	90	145	75	70	3570	860
ACS880-37-0206A-3	R8	206	287	110	196	110	169	90	70	4440	860
ACS880-37-0293A-3	R11	293	418	160	278	160	246	132	77	6900	2100
ACS880-37-0363A-3	R11	363	498	200	345	200	293	160	77	8500	2100
ACS880-37-0442A-3	R11	442	621	250	420	250	363	200	77	10500	2100
ACS880-37-0505A-3	R11	505	631	250	480	250	363	200	77	10600	2100
ACS880-37-0585A-3	R11	585	751	315	556	315	442	250	77	13200	2100
ACS880-37-0650A-3	R11	650	859	355	618	355	505	250	77	14800	2100
ACS880-37-0450A-3	R8i + R8i	450	590	250	432	200	337	160	75	11000	3760
ACS880-37-0620A-3	R8i + R8i	620	810	355	595	315	464	250	75	15000	3760
ACS880-37-0730A-3	R8i + R8i	730	950	400	701	355	546	250	75	18000	3760
ACS880-37-0800A-3	R8i + R8i	800	1040	450	758	400	598	315	75	20000	3760
ACS880-37-0870A-3	R8i + R8i	870	1050	500	835	450	651	355	75	23000	3760
ACS880-37-1110A-3	2×R8i + 2×R8i	1110	1450	630	1066	560	830	450	77	27000	7220
ACS880-37-1210A-3	2×R8i + 2×R8i	1210	1580	710	1162	630	905	500	77	29000	7220
ACS880-37-1430A-3	2×R8i + 2×R8i	1430	1860	800	1373	710	1070	560	77	34000	7220
ACS880-37-1700A-3	2×R8i + 2×R8i	1700	2040	1000	1632	900	1272	710	77	45000	7220
ACS880-37-2060A-3	3×R8i + 3×R8i	2060	2680	1200	1978	1100	1541	800	78	56000	11580
ACS880-37-2530A-3	3×R8i + 3×R8i	2530	3040	1400	2429	1200	1892	1000	78	68000	11580

U_N = 500 V (range 380 to 500 V). The power ratings are valid at nominal voltage 500 V (45 to 1600 kW).

Drive type	Frame size	Nominal ratings			Light overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow
		I_N (A)	I_{MAX} (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	(dB(A))	(W)	(m³/h)
ACS880-37-0101A-5	R8	101	148	55	91	55	77	45	70	2300	860
ACS880-37-0124A-5	R8	124	178	75	118	75	96	55	70	3100	860
ACS880-37-0156A-5	R8	156	247	90	148	90	124	75	70	3500	860
ACS880-37-0180A-5	R8	180	287	110	171	110	156	90	70	4300	860
ACS880-37-0260A-5	R11	260	418	160	247	160	240	132	77	6900	2100
ACS880-37-0361A-5	R11	361	542	200	343	200	260	160	77	8500	2100
ACS880-37-0414A-5	R11	414	614	250	393	250	361	200	77	10500	2100
ACS880-37-0460A-5	R11	460	660	315	450	315	414	250	77	13100	2100
ACS880-37-0503A-5	R11	503	725	355	492	355	460	315	77	14800	2100
ACS880-37-0420A-5	R8i + R8i	420	550	250	403	250	314	200	75	11000	3760
ACS880-37-0570A-5	R8i + R8i	570	750	400	547	355	426	250	75	15000	3760
ACS880-37-0640A-5	R8i + R8i	640	840	450	614	400	479	315	75	15000	3760
ACS880-37-0710A-5	R8i + R8i	710	930	500	682	450	531	355	75	18000	3760
ACS880-37-0780A-5	R8i + R8i	780	1020	560	749	500	583	400	75	21000	3760
ACS880-37-1010A-5	2×R8i + 2×R8i	1010	1320	710	970	630	755	500	77	27000	7220
ACS880-37-1110A-5	2×R8i + 2×R8i	1110	1450	800	1066	710	830	560	77	28000	7220
ACS880-37-1530A-5	2×R8i + 2×R8i	1530	1990	1100	1469	1000	1144	800	77	41000	7220
ACS880-37-1980A-5	3×R8i + 3×R8i	1980	2580	1400	1901	1300	1481	1000	78	51000	11580
ACS880-37-2270A-5	3×R8i + 3×R8i	2270	2960	1600	2179	1500	1698	1200	78	60000	11580

U_N = 690 V (range 525 to 690 V). The power ratings are valid at nominal voltage 690 V (132 to 3200 kW).

Drive type	Frame size	Nominal ratings			Light overload use		Heavy-duty use		Noise level	Heat dissipation	Air flow
		I_N (A)	I_{MAX} (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	(dB(A))	(W)	(m^3/h)
ACS880-37-0174A-7	R11	174	274	160	165	160	142	132	77	6900	2100
ACS880-37-0210A-7	R11	210	384	200	200	200	174	160	77	8500	2100
ACS880-37-0271A-7	R11	271	411	250	257	250	210	200	77	10500	2100
ACS880-37-0330A-7	R11	330	480	315	320	315	271	250	77	13000	2100
ACS880-37-0370A-7	R11	370	520	355	360	355	330	315	77	14700	2100
ACS880-37-0430A-7	R11	430	555	400	420	400	370	355	77	16500	2100
ACS880-37-0320A-7	R8i + R8i	320	480	315	307	250	239	200	75	13000	3760
ACS880-37-0390A-7	R8i + R8i	390	590	355	374	355	292	250	75	15000	3760
ACS880-37-0460A-7	R8i + R8i	460	690	450	442	400	344	315	75	17000	3760
ACS880-37-0510A-7	R8i + R8i	510	770	500	490	450	381	355	75	19000	3760
ACS880-37-0580A-7	R8i + R8i	580	870	560	557	500	434	400	75	23000	3760
ACS880-37-0660A-7	2×R8i + 2×R8i	660	990	630	634	560	494	450	77	26000	7220
ACS880-37-0770A-7	2×R8i + 2×R8i	770	1160	710	739	710	576	560	77	29000	7220
ACS880-37-0950A-7	2×R8i + 2×R8i	950	1430	900	912	800	711	710	77	38000	7220
ACS880-37-1130A-7	2×R8i + 2×R8i	1130	1700	1100	1085	1000	845	800	77	44000	7220
ACS880-37-1450A-7	3×R8i + 3×R8i	1450	2180	1400	1392	1300	1085	1000	78	54000	11580
ACS880-37-1680A-7	3×R8i + 3×R8i	1680	2520	1600	1613	1500	1257	1200	78	64000	11580
ACS880-37-1950A-7	4×R8i + 4×R8i	1950	2930	1900	1872	1800	1459	1400	79	80000	14440
ACS880-37-2230A-7	4×R8i + 4×R8i	2230	3350	2200	2141	2000	1668	1600	79	88000	14440
ACS880-37-2770A-7	6×R8i + 5×R8i	2770	4160	2700	2659	2600	2072	2000	79	113000	18800
ACS880-37-3310A-7	6×R8i + 6×R8i	3310	4970	3200	3178	3000	2476	2400	79	132000	21660

Nominal ratings	
I_N	Rated current available continuously without overloadability at 40 °C.
P_N	Typical motor power in no-overload use.
Maximum output current	
I_{max}	Maximum output current. Available for 10 seconds at start, then as long as allowed by drive temperature.
Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 40 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 40 °C.
P_{Hd}	Typical motor power in heavy-duty use.

The ratings apply at 40 °C ambient temperature.
At higher temperatures (up to 50 °C) the derating is 1%/1 °C. Operation above 150 Hz might require type-specific derating.
[1)] Values to be confirmed upon full sales release of the product. Please contact ABB for further information.

Liquid-cooled drives4
ACS880-37LC

The compact and robust liquid-cooled cabinet drives are an ultimate solution for various applications where space savings, silent operation or durability in harsh environments is a must.

The Single drives with diode supply unit consists of extremely compact diode supply and inverter units with parallel connected modules. The small footprint enables significant space and weight reduction.

Addition single drives with diode supply units the extensive ACS880 liquid-cooled offering includes low harmonic and regenerative variants.

Built-in redundancy through parallel connected modules enables higher drive availability and greater process uptime. If one of the modules is not operating or is being maintained, the drive will continue to operate at partial load.

Advanced liquid cooling and optimal design
Direct liquid cooling offers easy heat transfer without air filtering problems. Since the coolant takes care of 98% of the heat losses, no additional filtered air cooling is needed. This increases the total efficiency of the drive installation.

For harsh environmental conditions

Robust solution for different environments
Totally enclosed cabinet structure makes the ACS880 liquid-cooled drives perfect for harsh environmental conditions.

The offering fulfills marine and offshore requirements and the drives have marine type approvals from various key classification bodies.

As the direct liquid cooling enables silent operation, the ACS880 liquid-cooled drives are suitable for applications where noise levels are an important environmental factor.

Robust, reliable and compact

Simple and cost-efficient installation
The high-efficient liquid cooling removes the need for air-conditioning in the installation rooms, bringing the installation and operation costs down. As there is no need for additional air conditioning devices or air ducts, the installation is significantly simplified.

The used coolant type is Antifrogen® L, by Clariant International Ltd, cooling liquid with glycol and inhibitor. It is a ready-made, commercially available mix, which enables easy commissioning and maximized process uptime.

Liquid-cooled ACS880-07LC and ACS880-07CLC drives

- Power ratings: 250 to 6000 kW
- Enclosure classes: IP42 (as standard) and IP54

Main options:

- Optional liquid cooling unit (LCU) for single, redundant and tandem pump versions
- I/O extension modules, see page 62
- Communication protocol adapters, see page 62
- Emergency stop category 0 with opening main contactor/breaker
- Earth fault monitoring, unearthed mains (IT)

ACS880-07LC:

- Designed for industrial use
- 6- or 12-pulse solution
- Internal charging circuit for the drive

ACS880-07CLC:

- Extremely compact design focused on marine use
- 6-, 12- or 24-pulse solution

Liquid-cooled regenerative ACS880-17LC and ultra-low-harmonic ACS880-37LC drives

- Power ratings: 250 to 6000 kW
- Enclosure classes: IP42 (as standard) and IP54

Main options:

- Optional liquid cooling unit (LCU) for single, redundant and tandem pump versions
- Cabling solutions for bottom and top entry and exit
- I/O extension modules, see page 63
- Communication protocol adapters, see page 63

For more information on regenerative functionality see page 36 and on harmonics see page 42.

The drives have an extensive selection of built-in features and options. See page 100.

Highlights

- Advanced liquid cooling which reduces the need for air cooling in installation rooms
- High power density with compact and robust design
- Commercially available coolant mix, Antifrogen L
- Redundancy through parallel connected modules prevents unwanted process interruptions
- Low harmonic and regenerative variants
- Silent operation
- Suitable for harsh environments
- Marine approvals from various key classification bodies.

Ratings, types and voltages

Liquid-cooled ultra-low harmonic drives, ACS880-37LC

U_N = 690 V (range 525 to 690 V). The power ratings are valid at nominal voltage 690 V (250 to 6000 kW).

Drive type	Frame size	Nominal ratings			Light overload use		Heavy-duty use		Noise level	$P_{loss\ coolant}$	Coolant volume	Coolant flow rate
		I_N (A)	I_{MAX} (A)	P_N (kW)	I_{Ld} (A)	P_{Ld} (kW)	I_{Hd} (A)	P_{Hd} (kW)	(dB(A))	(kW)	(l)	(l/min)
ACS880-37LC-0390A-7	R8i + R8i	390	590	355	374	355	292	250	68	15	12	68
ACS880-37LC-0430A-7	R8i + R8i	430	650	400	413	355	322	250	68	17	12	68
ACS880-37LC-0480A-7	R8i + R8i	480	720	450	461	400	359	315	68	19	12	68
ACS880-37LC-0520A-7	R8i + R8i	520	780	500	499	450	389	355	68	21	12	68
ACS880-37LC-0600A-7	R8i + R8i	600	900	560	576	500	449	400	68	24	12	68
ACS880-37LC-0670A-7	R8i + R8i	670	1010	630	643	560	501	450	68	27	12	68
ACS880-37LC-0750A-7	R8i + R8i	750	1130	710	720	630	561	500	68	31	12	68
ACS880-37LC-0830A-7	R8i + R8i	830	1250	800	797	710	621	560	68	35	12	68
ACS880-37LC-1000A-7	2×R8i + 2×R8i	1000	1500	1000	960	900	748	710	70	38	19	120
ACS880-37LC-1170A-7	2×R8i + 2×R8i	1170	1760	1100	1123	1000	875	800	70	44	19	120
ACS880-37LC-1270A-7	2×R8i + 2×R8i	1270	1910	1200	1219	1200	950	900	70	50	19	120
ACS880-37LC-1470A-7	2×R8i + 2×R8i	1470	2210	1400	1411	1200	1100	1000	70	55	19	120
ACS880-37LC-1620A-7	2×R8i + 2×R8i	1620	2430	1600	1555	1400	1212	1200	70	63	19	120
ACS880-37LC-1940A-7	3×R8i + 3×R8i	1940	2910	1800	1862	1800	1451	1400	72	70	29	192
ACS880-37LC-2180A-7	3×R8i + 3×R8i	2180	3270	2000	2093	2000	1631	1600	72	81	29	192
ACS880-37LC-2390A-7	3×R8i + 3×R8i	2390	3590	2300	2294	2200	1788	1800	72	93	29	192
ACS880-37LC-2880A-7	4×R8i + 4×R8i	2880	4320	2700	2765	2600	2154	2000	73	105	38	224
ACS880-37LC-3160A-7	4×R8i + 4×R8i	3160	4740	3000	3034	2900	2364	2300	73	121	38	224
ACS880-37LC-3580A-7	5×R8i + 5×R8i	3580	5370	3400	3437	3200	2678	2500	74	132	48	296
ACS880-37LC-4050A-7	6×R8i + 5×R8i	4050	6080	3800	3888	3600	3029	2800	75	151	52	360
ACS880-37LC-4700A-7	6×R8i + 6×R8i	4700	7050	4400	4512	4400	3516	3400	75	182	58	376
ACS880-37LC-5650A-7	8×R8i + 7×R8i	5650	8480	5200	5424	5000	4226	4000	76	208	68	424
ACS880-37LC-6260A-7	8×R8i + 8×R8i	6260	9390	6000	6010	6000	4682	4500	76	286	75	504

Nominal ratings	
I_N	Rated current available continuously without overloadability at 45 °C.
P_N	Typical motor power in no-overload use.
P_{max}	Maximum nominal cooling power.
Internal flow	Nominal coolant flow rate from the liquid cooling unit to the drive modules.
External flow	Nominal coolant flow rate to the liquid cooling unit from an external cooling circuit.
Maximum output current	
I_{max}	Maximum output current. Available for 10 seconds at start, then as long as allowed by drive temperature.
Light-overload use	
I_{Ld}	Continuous current allowing 110% I_{Ld} for 1 minute every 5 minutes at 45 °C.
P_{Ld}	Typical motor power in light-overload use.
Heavy-duty use	
I_{Hd}	Continuous current allowing 150% I_{Hd} for 1 minute every 5 minutes at 45 °C.
P_{Hd}	Typical motor power in heavy-duty use.
Losses	
$P_{loss\ total}$	Power loss conducted to coolant and emitted to air.
$P_{loss\ coolant}$	Power loss conducted to coolant.
$P_{loss\ air}$	Power loss emitted to air (ambient room).
P_{drop}	Pressure loss in external cooling circuit.

The ratings apply at 45 °C ambient temperature. At higher temperatures (up to 55 °C) the derating is 1%/1 °C.
Operation above 150 Hz might require type-specific derating.

ACS880-17/37, IP22/42/54 *)

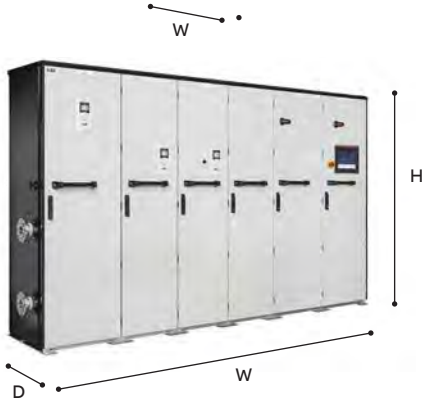
Frame size	Height		Width	Depth	Weight
	IP22/42 (mm)	IP54 (mm)	(mm)	(mm)	(kg)
R8	2145	2315	430	673/698 [1)]	320
R11	2145	2315	1230	698	750
R8i+R8i	2145	2315	1230	698	1180
2xR8i+2xR8i	2145	2315	2230/2430 [2)]	698	1970/2090 [2)]
3xR8i+3xR8i	2145	2315	3230	698/738 [3)]	2730/2930 [3)]
4xR8i+4xR8i	2145	2315	3830	738	3700
6xR8i+5xR8i	2145	2315	5030	738	4830
6xR8i+6xR8i	2145	2315	5330	738	4980

[1)] 698 mm for IP54
[2)] 2430mm/2090 kg for -1210A-3, -1430A-3, -1700A-3, -1530A-5.
[3)] 738mm/2930kg for -2060A-3, -2530A-3, -1980A-5, -2270A-5.

ACS880-17/37LC, IP42/54

Frame size	Height	Width	Depth	Weight
	(mm)	(mm)	(mm)	(kg)
1xR8i+1xR8i	2002	2000	644	2040
2xR8i+2xR8i	2002	2400/2500 [1)]	644	5070/5400 [2)]
3xR8i+3xR8i	2002	3200	644	7250
4xR8i+4xR8i	2002	4000	644	9060
5xR8i+5xR8i	2002	4600	644	10470
6xR8i+5xR8i	2002	5800	644	13600
6xR8i+6xR8i	2002	6000	644	13980
8xR8i+7xR8i	2002	7300	644	17020
8xR8i+12xR8i	2002	7600	644	17590

[1)] 2400 mm for -1000A-7, - 1170A-7 and -1270A-7. 2500 mm for -1470A-7 and -1620A-7.
[2)] 5070 kg for -1000A-7, - 1170A-7 and -1270A-7. 5400 kg for -1470A-7 and -1620A-7.



Sine filters for cabinet-built regenerative and ultra-low harmonic drives, ACS880-17 and ACS880-37

U_N = 400 V (range 380 to 415 V). The power ratings are valid at nominal voltage 400 V. [4)]

I_N	P_N [1)]	Noise level [2)]	Heat dissipation [3)]	Air flow	Drive type	Filter type	Degree of protection	Filter height	Filter width	Filter depth	Filter weight	Frame size
(A)	(kW)	(dB)	(kW)	(m^3/h)				(mm)	(mm)	(mm)	(kg)	
91	55	70	0.6	700	ACS880-17/37-0105A-3	B84143V0130R230	IP22	2145	600	646	330	R8
126	75	70	0.55	700	ACS880-17/37-0145A-3	B84143V0162S229	IP22	2145	600	646	330	R8
153	90	70	0.55	700	ACS880-17/37-0169A-3	B84143V0162S229	IP22	2145	600	646	330	R8
187	110	70	0,9	805	ACS880-17/37-0206A-3	B84143V0230S229	IP22	2145	600	646	330	R8
264	160	77	1.6	2100	ACS880-17/37-0293A-3	B84143V0390S229	IP22	2145	600	646	430	R11
327	200	77	1.6	2100	ACS880-17/37-0363A-3	B84143V0390S229	IP22	2145	600	646	430	R11
398	250	77	1.7	2100	ACS880-17/37-0442A-3	B84143V0390S229	IP22	2145	600	646	430	R11
455	250	80	3.0	2000	ACS880-17/37-0505A-3	NSIN0900-6	IP22	2145	1000	646	840	R11
527	315	80	3.4	2000	ACS880-17/37-0585A-3	NSIN0900-6	IP22	2145	1000	646	840	R11
585	355	80	3.8	2000	ACS880-17/37-0650A-3	NSIN0900-6	IP22	2145	1000	646	840	R11
450	250	80	16	700	ACS880-17/37-0450A-3	NSIN0485-6	IP22	2145	400	636	340	1×R8i+1×R8i
620	355	80	22	2000	ACS880-17/37-0620A-3	NSIN0900-6	IP22	2145	1000	636	840	1×R8i+1×R8i
870	500	81	32	2000	ACS880-17/37-0870A-3	NSIN1380-6	IP22	2145	1000	636	960	1×R8i+1×R8i
1110	630	81	38	2000	ACS880-17/37-1110A-3	NSIN1380-6	IP22	2145	1000	636	960	2×R8i+2×R8i
1210	710	81	41	2000	ACS880-17/37-1210A-3	NSIN1380-6	IP22	2145	1000	636	960	2×R8i+2×R8i

U_N = 500 V (range 380 to 500 V). The power ratings are valid at nominal voltage 500 V. [4]

I_N (A)	P_N [1] (kW)	Noise level [2] (dB)	Heat dissipation [3] (kW)	Air flow (m^3/h)	Drive type	Filter type	Degree of protection	Filter height (mm)	Filter width (mm)	Filter depth (mm)	Filter weight (kg)	Frame size
80	45	70	0.6	700	ACS880-17/37-0101A-5	B84143V0130S230	IP22	2145	600	646	330	R8
104	55	70	0.6	700	ACS880-17/37-0124A-5	B84143V0130S230	IP22	2145	600	646	330	R8
140	75	70	0.6	700	ACS880-17/37-0156A-5	B84143V0162S229	IP22	2145	600	646	330	R8
161	90	70	0.6	805	ACS880-17/37-0180A-5	B84143V0162S229	IP22	2145	600	646	330	R8
234	160	77	0.9	2100	ACS880-17/37-0260A-5	B84143V0230S229	IP22	2145	600	646	340	R11
325	200	77	1.6	2100	ACS880-17/37-0361A-5	B84143V0390S229	IP22	2145	600	646	430	R11
373	250	77	1.6	2100	ACS880-17/37-0414A-5	B84143V0390S229	IP22	2145	600	646	430	R11
414	315	80	3.3	2000	ACS880-17/37-0460A-5	NSIN0900-6	IP22	2145	1000	646	840	R11
453	355	80	3.6	2000	ACS880-17/37-0503A-5	NSIN0900-6	IP22	2145	1000	646	840	R11
420	250	80	15	700	ACS880-17/37-0420A-5	NSIN0485-6	IP22	2145	400	636	340	1×R8i+1×R8i
570	400	80	21	2000	ACS880-17/37-0570A-5	NSIN0900-6	IP22	2145	1000	636	840	1×R8i+1×R8i
780	560	80	30	2000	ACS880-17/37-0780A-5	NSIN0900-6	IP22	2145	1000	636	840	1×R8i+1×R8i
1010	710	81	39	2000	ACS880-17/37-1010A-5	NSIN1380-6	IP22	2145	1000	636	960	2×R8i+2×R8i
1110	800	81	40	2000	ACS880-17/37-1110A-5	NSIN1380-6	IP22	2145	1000	636	960	2×R8i+2×R8i

U_N = 690 V (range 525 to 690 V). The power ratings are valid at nominal voltage 690 V. [4]

I_N (A)	P_N [1] (kW)	Noise level [2] (dB)	Heat dissipation [3] (kW)	Air flow (m^3/h)	Drive type	Filter type	Degree of protection	Filter height (mm)	Filter width (mm)	Filter depth (mm)	Filter weight (kg)	Frame size
157	160	77	0.9	2100	ACS880-17/37-0174A-7	B84143V0207S230	IP22	2145	600	646	410	R11
189	200	77	0.9	2100	ACS880-17/37-0210A-7	B84143V0207S230	IP22	2145	600	646	410	R11
244	250	77	0.9	2100	ACS880-17/37-0271A-7	B84143V0207S230	IP22	2145	600	646	410	R11
297	315	80	2.2	700	ACS880-17/37-0330A-7	NSIN0485-6	IP22	2145	400	646	340	R11
333	355	80	2.3	700	ACS880-17/37-0370A-7	NSIN0485-6	IP22	2145	400	646	340	R11
387	400	80	2.4	700	ACS880-17/37-0430A-7	NSIN0485-6	IP22	2145	400	646	340	R11
320	315	80	18	700	ACS880-17/37-0320A-7	NSIN0485-6	IP22	2145	400	636	340	1×R8i+1×R8i
390	355	80	21	700	ACS880-17/37-0390A-7	NSIN0485-6	IP22	2145	400	636	340	1×R8i+1×R8i
580	560	80	30	2000	ACS880-17/37-0580A-7	NSIN0900-6	IP22	2145	1000	636	840	1×R8i+1×R8i
660	630	80	35	2000	ACS880-17/37-0660A-7	NSIN0900-6	IP22	2145	1000	636	840	2×R8i+2×R8i
770	710	80	41	2000	ACS880-17/37-0770A-7	NSIN0900-6	IP22	2145	1000	636	840	2×R8i+2×R8i
950	900	81	47	2000	ACS880-17/37-0950A-7	NSIN1380-6	IP22	2145	1000	636	960	2×R8i+2×R8i
1130	1100	81	57	2000	ACS880-17/37-1130A-7	NSIN1380-6	IP22	2145	1000	636	960	2×R8i+2×R8i

[1] Please note that sine filters cause a voltage drop, reducing the available shaft power from the motor.
[2] Noise level is a combined value for the drive and the filter.
[3] Heat dissipation is a combined value for the drive and the filter, except for frame sizes R8 and R11 the heat dissipation value is for the filter only.
[4] Higher powers available as application engineered (+P902).
Sine filters for larger types are available as customized option.
For further information please contact your local ABB office.

Brake options, ACS880-37

U_N = 400 V (range 380 to 415 V)

Nominal ratings					Duty cycle (1min/ 5min)		Duty cycle (10s/ 60s)		Brake chopper type	Brake resistor type		Drive type	Frame size
P_{brmax} (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)		
230	1.7	345	65	42	130	195	224	336	NBRA658	2 x SAFUR210F575	16800	ACS880-37-0105A-3+D150 [2]	R8
230	1.7	345	65	42	130	195	224	336	NBRA658	2 x SAFUR210F575	16800	ACS880-37-0145A-3+D150 [2]	R8
230	1.7	345	65	42	130	195	224	336	NBRA658	2 x SAFUR210F575	16800	ACS880-37-0169A-3+D150 [2]	R8
230	1.7	345	65	42	130	195	224	336	NBRA658	2 x SAFUR210F575	16800	ACS880-37-0206A-3+D150 [2]	R8
355	1.2	532	84	60	167	250	287	430	NBRA659	2 x SAFUR180F460	24000	ACS880-37-0293A-3+D150 [2]	R11
355	1.2	532	84	60	167	250	287	430	NBRA659	2 x SAFUR180F460	24000	ACS880-37-0363A-3+D150 [2]	R11
355	1.2	532	84	60	167	250	287	430	NBRA659	2 x SAFUR180F460	24000	ACS880-37-0442A-3+D150 [2]	R11
355	1,2	532	84	60	167	250	287	430	NBRA659	2 x SAFUR180F460	24000	ACS880-37-0505A-3+D150 [2]	R11
355	1.2	532	84	60	167	250	287	430	NBRA659	2 x SAFUR180F460	24000	ACS880-37-0585A-3+D150 [2]	R11
355	1.2	532	84	60	167	250	287	430	NBRA659	2 x SAFUR180F460	24000	ACS880-37-0650A-3+D150 [2]	R11
353	1.2	545	84	54	167	444	287	444	NBRA659	2 x SAFUR180F460	12000	ACS880-37-0450A-3+D150 [2]	R8i+R8i
353	1.2	545	84	54	167	444	287	444	NBRA659	2 x SAFUR180F460	12000	ACS880-37-0620A-3+D150 [2]	R8i+R8i
706	0.6	1090	168	108	333	514	575	888	2xNBRA659	2 x 2 x AFUR180F460)	24000	ACS880-37-0870A-3+D150 [2]	R8i+R8i
706	0.6	1090	168	108	333	514	575	888	2xNBRA659	2 x 2 x AFUR180F460)	24000	ACS880-37-1110A-3+D150 [2]	2×R8i+2×R8i
706	0.6	1090	168	108	333	514	575	888	2xNBRA659	2 x 2 x AFUR180F460)	24000	ACS880-37-1210A-3+D150 [2]	2×R8i+2×R8i
1058	0.4	1635	252	162	500	771	862	1332	3xNBRA659	3 x (2 x SAFUR180F460)	36000	ACS880-37-1430A-3+D150 [2]	2×R8i+2×R8i
1058	0.4	1635	252	162	500	771	862	1332	3xNBRA659	3 x (2 x SAFUR180F460)	36000	ACS880-37-1700A-3+D150 [2]	2×R8i+2×R8i

U_N = 500 V (range 380 to 500 V)

Nominal ratings					Duty cycle (1min/ 5min)		Duty cycle (10s/ 60s)		Brake chopper type	Brake resistor type		Drive type	Frame size
P_{brmax} (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)		
268	2	334	45	36	111	138	192	239	NBRA658	2 x SAFUR125F500	14400	ACS880-37-0101A-5+D150 [2]	R8
268	2	334	45	36	111	138	192	239	NBRA658	2 x SAFUR125F500	14400	ACS880-37-0124A-5+D150 [2]	R8
268	2	334	45	36	111	138	192	239	NBRA658	2 x SAFUR125F500	14400	ACS880-37-0156A-5+D150 [2]	R8
268	2	334	45	36	111	138	192	239	NBRA658	2 x SAFUR125F500	14400	ACS880-37-0180A-5+D150 [2]	R8
403	1.35	502	67	54	167	208	287	357	NBRA659	2 x SAFUR200F500	21600	ACS880-37-0260A-5+D150 [2]	R11
403	1.35	502	67	54	167	208	287	357	NBRA659	2 x SAFUR200F500	21600	ACS880-37-0361A-5+D150 [2]	R11
403	1.35	502	67	54	167	208	287	357	NBRA659	2 x SAFUR200F500	21600	ACS880-37-0414A-5+D150 [2]	R11
403	1.35	502	67	54	167	208	287	357	NBRA659	2 x SAFUR200F500	21600	ACS880-37-0460A-5+D150 [2]	R11
403	1.35	502	67	54	167	208	287	357	NBRA659	2 x SAFUR200F500	21600	ACS880-37-0503A-5+D150 [2]	R11
403	1.35	605	67	54	167	206	287	355	NBRA659	2 x SAFUR200F500	10800	ACS880-37-0420A-5+D150 [2]	R8i+R8i
403	1.35	605	67	54	167	206	287	355	NBRA659	2 x SAFUR200F500	10800	ACS880-37-0570A-5+D150 [2]	R8i+R8i
806	0.68	1210	134	108	333	412	575	710	2xNBRA659	2 x 2 x AFUR200F500)	21600	ACS880-37-0780A-5+D150 [2]	R8i+R8i
806	0.68	1210	134	108	333	412	575	710	2xNBRA659	2 x 2 x AFUR180F460)	21600	ACS880-37-1010A-5+D150 [2]	2×R8i+2×R8i
806	0.68	1210	134	108	333	412	575	710	2xNBRA659	2 x 2 x AFUR200F500)	21600	ACS880-37-1110A-5+D150 [2]	2×R8i+2×R8i
1208	0.45	2815	201	162	500	618	862	1065	3xNBRA659	3 x (2 x SAFUR200F500)	32400	ACS880-37-1530A-5+D150 [2]	2×R8i+2×R8i

U_N = 690 V (range 525 to 690 V)

Nominal ratings					Duty cycle (1min/ 5min)		Duty cycle (10s/ 60s)		Brake chopper type	Brake resistor type		Drive type	Frame size
P_{brmax} (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)		
403	1.35	364	97	54	167	151	287	259	NBRA669	2 x SAFUR200F500		ACS880-37-0174A-7+D150 [2)]	R11
403	1.35	364	97	54	167	151	287	259	NBRA669	2 x SAFUR200F500		ACS880-37-0210A-7+D150 [2)]	R11
403	1.35	364	97	54	167	151	287	259	NBRA669	2 x SAFUR200F500		ACS880-37-0271A-7+D150 [2)]	R11
403	1.35	364	97	54	167	151	287	259	NBRA669	2 x SAFUR200F500		ACS880-37-0330A-7+D150 [2)]	R11
403	1.35	364	97	54	167	151	287	259	NBRA669	2 x SAFUR200F500		ACS880-37-0370A-7+D150 [2)]	R11
403	1.35	364	97	54	167	151	287	259	NBRA669	2 x SAFUR200F500		ACS880-37-0430A-7+D150 [2)]	R11
404	1.35	835	97	54	167	149	287	257	NBRA669	2 x SAFUR200F500	10800	ACS880-37-0320A-7+D150 [2)]	R8i+R8i
404	1.35	835	97	54	167	149	287	257	NBRA669	2 x SAFUR200F500	10800	ACS880-37-0390A-7+D150 [2)]	R8i+R8i
807	0.68	1670	194	108	333	298	575	514	2xNBRA669	2 x 2 x AFUR200F500)	21600	ACS880-37-0580A-7+D150 [2)]	R8i+R8i
807	0.68	1670	194	108	333	298	575	514	2xNBRA669	2 x 2 x AFUR200F500)	21600	ACS880-37-0660A-7+D150 [2)]	2×R8i+2×R8i
1211	0.45	2505	291	162	500	447	862	771	3xNBRA-669	3 x (2 x SAFUR200F500)	32400	ACS880-37-0770A-7+D150 [2)]	2×R8i+2×R8i
1211	0.45	2505	291	162	500	447	862	771	3xNBRA-669	3 x (2 x SAFUR200F500)	32400	ACS880-37-0950A-7+D150 [2)]	2×R8i+2×R8i
1211	0.45	2505	291	162	500	447	862	771	3xNBRA-669	3 x (2 x SAFUR200F500)	32400	ACS880-37-1130A-7+D150 [2)]	2×R8i+2×R8i

Brake choppers and resistors for larger types are available as customized option.
[2)] = +D150+D151 if resistor is ordered

Ratings	
P_{brmax}	Maximum braking power of the ACS880 equipped with the standard chopper and resistor.
R	Resistance value for the listed resistor type.
R_{min}	Minimum allowable resistance value for the brake resistor.
E_r	Energy pulse that the resistor assembly will withstand (400 s duty cycle). This energy will heat the resistor element from 40 °C to the maximum allowable temperature.
P_{cont}	Maximum continuous braking power
I_{max}	Maximum peak current during braking. Current is achieved with recommended resistor resistance.
I_{rms}	Corresponding rms current during load cycle.
P_{rcont}	Continuous power (heat) dissipation of the resistor when placed correctly. Energy E_r dissipates in 400 seconds.

Brake options, ACS880-07CLC, ACS880-17LC and ACS880-37LC

For liquid-cooled cabinet drives, ACS880-07CLC, -17LC and -37LC, brake options are available as engineered variants.

Summary of features and options

ACS880 air-cooled single drives

	Option code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i [8]
Mounting							
Wall-mounting		●	●	–	–	–	–
For cabinet mounting	+P940	□	□	–	–	–	–
	+P944	□	–	–	–	–	–
Cabinet-built		–	–	●	●	●	●
Vibration dampers	+C131	□	–	–	–	–	–
Flange mounting	+C135	□ [15]	□ [15]	–	–	–	–
Cabling							
Bottom entry and exit		●	●	●	●	●	●
Top entry and exit	+H351, +H353	–	–	□	□	□	□
Degree of protection							
IP20 (UL open type)	+P940	□	□	–	–	–	–
	+P944	□	–	–	–	–	–
IP21 (UL type 1)		●	●	–	–	–	–
IP22 (UL type 1)		–	–	●	●	●	●
IP42 (UL type 1)	+B054	–	–	□	□	□	□
IP54 (UL type 12)	+B055	–	–	□	□	□	□
IP55 (UL type 12)	+B056	□	□	–	–	–	–
Nickel plated busbars (tin plating as standard) [30]	+C255	□	–	–	–	–	–
Motor control							
DTC motor control		●	●	●	●	●	●
Control panel							
Intuitive control panel		● [1]	● [1]	●	●	●	●
Integrated control panel holder in the drive		●	●	●	●	●	●
Control panel mounting platform DPMP-01 (flush) / DPMP-02 (surface)		■	■	●	●	●	●
EMC filters							
EMC 1st environment, restricted distribution, C2, grounded network (TN)	+E202	□ [2]	□	□ [2]	□ [16]	□ [19]	□ [22]
EMC 2nd environment, C3, grounded network (TN)	+E200	□ [3]	□	□ [3]	●	□ [20]	●
EMC 2nd environment, C3, ungrounded network (IT)	+E201	□ [4]	□	□ [4]	●	□ [23]	●
Line filter							
AC or DC choke		●	–	●	●	–	–
Advanced line harmonic filter (LCL)		–	●	–	–	●	●
Output filter							
Common mode filter	+E208	□	□	□	●	□ [28]	●
du/dt filters	+E205	■	■	□	●	□	●
Braking (see braking unit table)							
Brake chopper	+D150	□ [5]	■ [8]	□	□ [6]	□	□
Brake resistor	+D151	■	■ [8]	□	□ [6]	□	□

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code

ACS880 air-cooled single drives

	Option code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i[8]
Software							
Primary control program		●	●	●	●	●	●
Drive application programming based on IEC 61131-3 using Drive Application Builder (available for primary control program)	+N8010	□	□	□	□	□	□
Application control program for winder	+N5000	□	□	□	□	□	□
Application control program for crane	+N5050	□	□	□	□	□	□
Application control program for winch	+N5100	□	□	□	□	□	□
Application control program for centrifuge/decanter	+N5150	□	□	□	□	□	□
Application control program for PCP pump	+N5200	□	□	□	□	□	□
Application control program for Rod pump	+N5250	□	□	–	–	–	–
Application control program for test bench	+N5300	□	□	□	□	□	□
Application control program for cooling tower direct drive	+N5350	□	□	□	□	□	□
Application control program for override control	+N5450	□	□	□	□	–	□
Application control program for spinning and traverse	+N5500	□	[17]	–	–	□	–
Application control program for chemical industry process control	+N5550	□	[17]	–	–	–	–
Application control program for ESP pumps	+N5600	□	□	□	□	□	□
Application control program for tower cranes	+N5650	□	□	–	–	–	–
Application control program for position control	+N5700	□	□	□	□	□	□
Application control program for anticavitation	+N5900	□	□	–	–	–	–
Support for asynchronous motor		●	●	●	●	●	●
Support for permanent magnet motor		●	●	●	●	●	●
Support for Synchronous reluctance motor (SynRM)	+N7502	□	□	□	□	□	□
High-speed operation up to 598 Hz output frequency. Operation above 598 Hz requires also +N8200.	+N7500	□[29]	–	–	–	–	–
High-speed license. Allows high-speed operation above 598 Hz output frequency.	+N8200	□[24]	–	□[24]	□[24]	□[24]	□[24]
Rectifier bridge							
12-pulse	+A004	–	–	–	□	–	–
Line side apparatus							
aR line fuses		–	–	●	●	●	●
Main switch		–	–	●	●	●	●
Line contactor	+F250	–	–	□	□[10]	●	●[11]
Air circuit breaker	+F255	–	–	–	□[7]	–	●[12]
Earthing switch	+F259	–	–	–	□	–	□
Cabinet options							
Cabinet heater (ext. supply)	+G300	–	–	□	□	□	□
Output for motor heater (ext. supply)	+G313	–	–	□	□	□	□
Customized options	+P902	–	–	□	□	□	□

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code

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ACS880 air-cooled single drives

	Option code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i [8]
Safety functions [18]							
Safe torque off (STO)		●	●	●	●	●	●
Safety functions module, FSO-12, without encoder, configurable functions: - Safe stop 1 (SS1-t, SS1-r), - Safely-limited speed (SLS) - Safe brake control (SBC) - Safe maximum speed (SMS) - Safe stop emergency (SSE) - Prevention of unexpected start-up (POUS) - Safe torque off (STO)	+Q973	□	□	□	□	□	□
Safety functions module, FSO-21, with encoder support, configurable functions: - Safe stop 1 (SS1-t, SS1-r) - Safely-limited speed (SLS) - Safe brake control (SBC) - Safe maximum speed (SMS) - Safe stop emergency (SSE) - Prevention of unexpected start-up (POUS) - Safe direction (SDI), requires encoder feedback, FSE-31 - Safe speed monitoring (SSM) - Safe torque off (STO)	+Q972	□	□	□	□	□	□
Pulse encoder interface module, FSE-31	+L521	□	□	□	□	□	□
PROFIsafe over PROFINET	+Q982	□	□	□	□	□	□
PROFIsafe safety functions module, FSPS-21	+Q986	□	□	□	□	□ [8]	□ [8]
Prevention of unexpected start-up with safety relay (preconfigured)	+Q957	–	–	□	□	□	□
Prevention of unexpected start-up with FSO-12 and -21 (preconfigured)	+Q950	–	–	□	□	□	□
Emergency stop, category 0 with opening the main contactor/breaker, with safety relay (preconfigured)	+Q951	–	–	□	□	□	□
Emergency stop, category 1 with opening the main contactor/breaker, with safety relay (preconfigured)	+Q952	–	–	□	□	□	□
Emergency stop, category 0 with STO, with safety relay (preconfigured)	+Q963	–	–	□	□	□	□
Emergency stop, category 1 with STO, with safety relay (preconfigured)	+Q964	–	–	□	□	□	□
Emergency stop, configurable category 0 or 1 with opening the main contactor/breaker, with FSO-12 and -21 (preconfigured)	+Q978	–	–	□	□	□	□
Emergency stop, configurable category 0 or 1 with STO and FSO-12 and -21 (preconfigured)	+Q979	–	–	□	□	□	□
Safely-limited speed with encoder, with FSO-21 and FSE-31 (preconfigured)	+Q965	–	–	□	□	□	□
ATEX certified thermistor protection module, FPTC-02, Ex II (2) GD	+L537 +Q971	□	□	□	□	□	□
ATEX thermal motor protection PTC/PT100, Ex II (2) GD	+L513/+L514 +Q971	–	–	□	□	□	□
Earth fault protection							
Earth fault monitoring, earthed mains		●	●	●	●	●	●
Earth fault monitoring, unearthed mains	+Q954	–	–	□	□	□	□

● Standard

□ Selectable option, with plus code

■ Selectable option, external, no plus code

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ACS880 air-cooled single drives

	Option code	ACS880-01 R1 to R9	ACS880-11/31 R3 to R8	ACS880-07 R6 to R11	ACS880-07 nxR8i	ACS880-17/37 R8 to R11	ACS880-17/37 nxR8i [8]
Control connections (I/O) and communications							
2 pcs analog inputs, programmable, galvanically isolated		●	●	●	●	●	●
2 pcs analog outputs, programmable		●	●	●	●	●	●
6 pcs digital inputs, programmable, galvanically isolated – can be divided into two groups		●	●	●	●	●	●
2 pcs digital inputs/outputs		●	●	●	●	●	●
1 pcs digital input interlock		●	●	●	●	●	●
3 pcs relay outputs programmable		●	●	●	●	●	●
Drive-to-drive link/Built-in Modbus		●	●	●	●	●	●
Assistant control panel/PC tool connection		●	●	●	●	●	●
Possibility for external power supply for control unit		●	●	●	●	●	●
Built-in I/O extension and speed feedback modules: for more details see sections: “Input/output extension modules”, “Speed feedback interfaces for precise process control” and “DDCS communication option modules” [25]		□	□	□	□	□	□
Built-in adapters for several communication protocols: for more details see section “Communication protocol adapters” [26]		□	□	□	□	□	□
Approvals							
CE, UKCA		●	●	●	●	●	●
UL, cUL	+C129	●	●	□	□	□	□
CSA	+C134	●	●	□	□	□	□
EAC/GOST R [9]		●	●	●	●	●	●
RoHS		●	●	●	●	●	●
RCM		●	●	●	●	●	●
Marine type approvals [13]	+C132	□[13]	□[13]	□[13]	□[13]	□[13]	□[13]
Marine construction	+C121	–	–	□	□	□	□
Marine product certification for essential applications		□[8]	□[8]	□[8]	□[8]	–	–
TÜV nord certificate for safety functions		●	●	●	●	●	●
ATEX certified safe disconnection function, Ex II (2) GD (notified body: Eurofins)	+Q971	□	□	□	□	□	□
SEMI F47		●	●	●	●	●	●

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code
– Not available

1) Without control panel, +0J400
2) For frame sizes R1 to R9, 380 to 500 V (-01). For frame sizes R6 to R11, 380 to 500 V (-07).
3) For frame sizes R1 to R9, 380 to 500 V, and frame sizes R3 to R9, 690 V (-01). For frame sizes R6 to R11, 380 to 690 V (-07).
4) For frame sizes R6 to R9, 380 to 500 V, and frame sizes R7 to R9, 690 V (-01). For frame sizes R6 to R9, 380 to 500 V and frame size R6, 690 V and frame sizes R10 to R11, 380 to 690 V (-07).
2nd environment C4 for frame sizes R1 to R5, 380 to 500 V, and frame sizes R3 to R6, 690 V (-01).
5) Frame sizes R1 to R4 built-in and R5 to R9 as selectable option
6) 2×R8i
7) 2×D8T to 4×D8T
8) Check availability from local ABB
– EAC has replaced GOST R
– D8T, 2×D7T and 2×D8T
– R8i to 2×R8i, 400 to 500 V. R8i to 3×R8i, 690 V
– 3×R8i, 400 to 500 V. 4×R8i and 6×R8i, 690 V
– ACS880 marine type approvals and type approved drives are listed at
– For cabinet-built drives (-07)
– Available only with IP20 (+P940 or +P944)
– For 1140A-3 and 1070A-5 (-07 nxR8i).
– Pending
– Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options. FSO-xx can also be mounted on a DIN rail by using a separate installation kit. DIN rail mounting does not consume the drive's option slots. With frames R6 to R11 it is possible to mount the FSO-xx inside the drive without using the drive's option slots.
– For frame sizes R8 and R11, 380 to 500 V (-17, -37).
– For frame size R8, 380 to 500 V (-17,-37). As standard for R11, 380 to 690 V.
– Only for frame size R11.
– Only for frame size 1xR8i, 380 to 500 V (-17,-37).
– For frame size R8, 380 to 500 V (-17,-37). For R11, 380 to 690 V, please contact your local ABB.
– For availability and further information, please contact your local ABB office.
– Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options. The slot number for I/O and encoder options can be extended with FEA-03 option. Please note that functional safety and communication protocol adapters cannot be used with FEA-03.
– Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options.
– For ACS880-37LC.
– Common mode filter (+E208) is standard for 690 V devices.
– Available for voltages from 380 to 500 V.
– Frames R5 – R9

ACS880 liquid-cooled single drives

	Option code	ACS880-07LC nxR8i	ACS880-07CLC nxR8i	ACS880-17/37LC nxR8i
Mounting				
Wall-mounting		–	–	–
For cabinet mounting	+P940	–	–	–
	+P944	–	–	–
Cabinet-built		●	●	●
Flange mounting	+C135	–	–	–
Cabling				
Bottom entry and exit		●	●	●
Top entry and exit		□	–	□
Degree of protection				
IP20 (UL open type)	+P940	–	–	–
	+P944	–	–	–
IP21 (UL type 1)		–	–	–
IP22 (UL type 1)		–	–	–
IP42 (UL type 1)	+B054	●	●	●
IP54 (UL type 12)	+B055	□	□	□
IP55 (UL type 12)	+B056	–	–	–
Motor control				
DTC motor control		●	●	●
Control panel				
Intuitive control panel		●	●	●
Integrated control panel holder in the drive		–	–	–
Control panel mounting platform DPMP-01 (flush) / DPMP-02 (surface)		–	–	–
EMC filters				
EMC 1st environment, restricted distribution, C2, grounded network (TN)	+E202	–	–	–
EMC 2nd environment, C3, grounded network (TN)	+E200	–	–	–
EMC 2nd environment, C3, ungrounded network (IT)	+E201	–	–	–
EMC 2nd environment, C3, grounded (TN) and ungrounded (IT)	+E210	●	●	●
Line filter				
AC or DC choke		●	–	–
Advanced line harmonic filter (LCL)		–	–	●
Output filter				
Common mode filter	+E208	●	●	●
du/dt filters	+E205	●	●	●
Braking (see braking unit table)				
Brake chopper	+D150	□	□	□[27)]
Brake resistor	+D151	□	□	□[27)]

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code

ACS880 liquid-cooled single drives

	Option code	ACS880-07LC nxR8i	ACS880-07CLC nxR8i	ACS880-17/37LC nxR8i
Software				
Primary control program		●	●	●
Drive application programming based on IEC 61131-3 using Drive Application Builder (available for primary control program)	+N8010	□	□	□
Application control program for winder	+N5000	□	–	□
Application control program for crane	+N5050	□	□	□
Application control program for winch	+N5100	□	□	□
Application control program for centrifuge/decanter	+N5150	□	□	□
Application control program for PCP pump	+N5200	□	□	□
Application control program for Rod pump	+N5250	□	–	□
Application control program for test bench	+N5300	□	–	□
Application control program for cooling tower direct drive	+N5350	–	–	–
Application control program for override control	+N5450	□	–	□
Application control program for spinning and traverse	+N5500	–	–	–
Application control program for chemical industry process control	+N5550	–	–	–
Application control program for ESP pumps	+N5600	□	□	□
Application control program for tower cranes	+N5650	–	–	–
Application control program for position control	+N5700	□[24)]	□[24)]	□[24)]
Support for asynchronous motor		●	●	●
Support for permanent magnet motor		●	●	●
Support for Synchronous reluctance motor (SynRM)	+N7502	□	□	□
High-speed license. Allows high-speed operation above 598 Hz output frequency.	+N8200	□[24)]	□[24)]	□[24)]
Rectifier bridge				
12-pulse	+A004	□	□	–
24-pulse		–	□	–
Line side apparatus				
aR line fuses		●	●	●
Main switch		–	–	–
Line contactor	+F250	–	–	–
Air circuit breaker	+F255	●	–	●
Earthing switch	+F259	□	–	□
Cabinet options				
Cabinet heater (ext. supply)	+G300	□	□	□
Output for motor heater (ext. supply)	+G313	□	□	□
Customized options	+P902	●	●	●

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code

ACS880 liquid-cooled single drives

	Option code	ACS880-07LC nxR8i	ACS880-07CLC nxR8i	ACS880-17/37LC nxR8i
Safety functions [18)]				
Safe torque off (STO)		●	●	●
Safety functions module, FSO-12, without encoder, configurable functions: - Safe stop 1 (SS1-t, SS1-r), - Safely-limited speed (SLS) - Safe brake control (SBC) - Safe maximum speed (SMS) - Safe stop emergency (SSE) - Prevention of unexpected start-up (POUS) - Safe torque off (STO)	+Q973	□	–	□
Safety functions module, FSO-21, with encoder support, configurable functions: - Safe stop 1 (SS1-t, SS1-r) - Safely-limited speed (SLS) - Safe brake control (SBC) - Safe maximum speed (SMS) - Safe stop emergency (SSE) - Prevention of unexpected start-up (POUS) - Safe direction (SDI), requires encoder feedback, FSE-31 - Safe speed monitoring (SSM) - Safe torque off (STO)	+Q972	□	–	□
Pulse encoder interface module, FSE-31	+L521	□	–	□
PROFIsafe over PROFINET	+Q982	□	–	□
PROFIsafe safety functions module, FSPS-21	+Q986	□	–	□
Prevention of unexpected start-up with safety relay (preconfigured)	+Q957	□	–	□
Prevention of unexpected start-up with FSO-12 and -21 (preconfigured)	+Q950	□	–	□
Emergency stop, category 0 with opening the main contactor/breaker, with safety relay (preconfigured)	+Q951	□	□	□
Emergency stop, category 1 with opening the main contactor/breaker, with safety relay (preconfigured)	+Q952	□	–	□
Emergency stop, category 0 with STO, with safety relay (preconfigured)	+Q963	□	–	□
Emergency stop, category 1 with STO, with safety relay (preconfigured)	+Q964	□	–	□
Emergency stop, configurable category 0 or 1 with opening the main contactor/breaker, with FSO-12 and -21 (preconfigured)	+Q978	□	–	□
Emergency stop, configurable category 0 or 1 with STO and FSO-12 and -21 (preconfigured)	+Q979	□	–	□
Safely-limited speed with encoder, with FSO-21 and FSE-31 (preconfigured)	+Q965	□	–	□
ATEX certified thermistor protection module, FPTC-02, Ex II (2) GD	+L537 +Q971	□	–	□
ATEX thermal motor protection PTC/PT100, Ex II (2) GD	+L513/+L514 +Q971	□	–	□
Earth fault protection				
Earth fault monitoring, earthed mains		●	●	●
Earth fault monitoring, unearthed mains	+Q954	□	□	□

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code

ACS880 liquid-cooled single drives

	Option code	ACS880-07LC nxR8i	ACS880-07CLC nxR8i	ACS880-17/37LC nxR8i
Control connections (I/O) and communications				
2 pcs analog inputs, programmable, galvanically isolated		●	●	●
2 pcs analog outputs, programmable		●	●	●
6 pcs digital inputs, programmable, galvanically isolated – can be divided into two groups		●	●	●
2 pcs digital inputs/outputs		●	●	●
1 pcs digital input interlock		●	●	●
3 pcs relay outputs programmable		●	●	●
Drive-to-drive link/Built-in Modbus		●	●	●
Assistant control panel/PC tool connection		●	●	●
Possibility for external power supply for control unit		●	●	●
Built-in I/O extension and speed feedback modules: for more details see sections: “Input/output extension modules”, “Speed feedback interfaces for precise process control” and “DDCS communication option modules” [25]		□	□	□
Built-in adapters for several communication protocols: for more details see section “Communication protocol adapters” [26]		□	□	□
Approvals				
CE, UKCA		●	●	●
UL, cUL	+C129	□	□	□
CSA	+C134	□ [17]	□ [17]	□ [17]
EAC/GOST R [9]		●	–	●
RoHS		●	●	●
RCM		●	●	●
Marine type approvals [13]	+C132	□	□	□
Marine construction	+C121	□	□	□
Marine product certification for essential applications		□ [8]	□ [8]	□ [8]
TÜV nord certificate for safety functions		●	●	●
ATEX certified safe disconnection function, Ex II (2) GD (notified body: Eurofins)	+Q971	–	–	–
SEMI F47		●	●	●

● Standard
□ Selectable option, with plus code
■ Selectable option, external, no plus code
– Not available

1) Without control panel, +0J400
2) For frame sizes R1 to R9, 380 to 500 V (-01). For frame sizes R6 to R11, 380 to 500 V (-07).
3) For frame sizes R1 to R9, 380 to 500 V, and frame sizes R3 to R9, 690 V (-01). For frame sizes R6 to R11, 380 to 690 V (-07).
4) For frame sizes R6 to R9, 380 to 500 V, and frame sizes R7 to R9, 690 V (-01). For frame sizes R6 to R9, 380 to 500 V and frame size R6, 690 V and frame sizes R10 to R11, 380 to 690 V (-07).
2nd environment C4 for frame sizes R1 to R5, 380 to 500 V, and frame sizes R3 to R6, 690 V (-01).
5) Frame sizes R1 to R4 built-in and R5 to R9 as selectable option
6) 2×R8i
7) 2×D8T to 4×D8T
8) Check availability from local ABB
– EAC has replaced GOST R
– D8T, 2×D7T and 2×D8T
– R8i to 2×R8i, 400 to 500 V. R8i to 3×R8i, 690 V
– 3×R8i, 400 to 500 V. 4×R8i and 6×R8i, 690 V
– ACS880 marine type approvals and type approved drives are listed at.
– For cabinet-built drives (-07)
– Available only with IP20 (+P940 or +P944)
– For 1140A-3 and 1070A-5 (-07 nxR8i).
– Pending
– Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options. FSO-xx can also be mounted on a DIN rail by using a separate installation kit. DIN rail mounting does not consume the drive's option slots. With frames R6 to R11 it is possible to mount the FSO-xx inside the drive without using the drive’s option slots.
– For frame sizes R8 and R11, 380 to 500 V (-17, -37).
– For frame size R8, 380 to 500 V (-17,-37). As standard for R11, 380 to 690 V.
– Only for frame size R11.
– Only for frame size 1xR8i, 380 to 500 V (-17,-37).
– For frame size R8, 380 to 500 V (-17,-37). For R11, 380 to 690 V, please contact your local ABB.
– For availability and further information, please contact your local ABB office.
– Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options. The slot number for I/O and encoder options can be extended with FEA-03 option. Please note that functional safety and communication protocol adapters cannot be used with FEA-03.
– Three option slots are available for I/O extension, speed feedback, communication protocol and functional safety options.
– For ACS880-37LC.
– Common mode filter (+E208) is standard for 690 V devices.

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