ПРОМЫШЛЕННЫЕ ПРИВОДЫ
Техническое описание на модули
ACS880-104LC

Technical data

Contents of this chapter

This chapter contains the technical specifications of the inverter modules and associated components.

Ratings

Inverter unit type ACS880-104LC-	Frame size	Input ratings	Output ratings							
			I_{max}	No-overload use			Light-overload use		Heavy-duty use	
		I_1		I_2	P_N	S_N	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}
		A	A	A	kW	kVA	A	kW	A	kW
U_N = 400 V										
0094A-3	R7i	106	150	85	45	65	90	45	70	37
0120A-3	R7i	129	180	104	55	80	110	55	86	45
0140A-3	R7i	159	220	141	75	98	135	55	105	55
0170A-3	R7i	191	260	169	90	118	163	75	127	55
0210A-3	R7i	232	310	206	110	143	198	90	154	75
0250A-3	R7i	277	370	246	132	170	236	110	184	90
0300A-3	R7i	340	460	300	160	209	290	132	226	110
0380A-3	R7i	428	570	374	200	263	365	160	284	132
0470A-3	R7i	523	700	465	250	322	446	200	348	160

Inverter unit type ACS880-104LC-	Frame size	Input ratings	Output ratings							
			I_{max}	No-overload use			Light-overload use		Heavy-duty use	
		I_1		I_2	P_N	S_N	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}
		A	A	A	kW	kVA	A	kW	A	kW
Units consisting of parallel-connected R7i modules See chapter Frame R7i and multiples (page 176)										
0590A-3	2×R7i	664	890	576	315	409	566	250	441	200
0740A-3	2×R7i	833	1110	730	400	513	710	355	554	250
0910A-3	2×R7i	1024	1370	900	500	630	874	450	681	355
1120A-3	3×R7i	1260	1680	1115	630	776	1075	560	838	450
1350A-3	3×R7i	1519	2030	1240	710	935	1296	710	1010	560
1460A-3	4×R7i	1643	2190	1415	800	1012	1402	710	1092	560
1790A-3	4×R7i	2014	2690	1769	1000	1240	1718	900	1339	710
U_N = 500 V										
0094A-5	R7i	106	150	83	55	81	90	55	70	45
0120A-5	R7i	129	180	113	75	100	110	75	86	55
0140A-5	R7i	158	210	135	90	121	134	90	105	55
0170A-5	R7i	191	260	165	110	147	163	110	127	75
0200A-5	R7i	225	300	197	132	173	192	132	150	90
0240A-5	R7i	270	360	240	160	208	230	160	180	110
0300A-5	R7i	340	460	299	200	262	290	200	226	132
0380A-5	R7i	428	570	372	250	329	365	200	284	160
0460A-5	R7i	519	700	461	315	399	443	315	345	200
Units consisting of parallel-connected R7i modules See chapter Frame R7i and multiples (page 176)										
0590A-5	2×R7i	664	890	584	400	511	566	355	441	315
0740A-5	2×R7i	833	1110	720	500	641	710	450	554	355
0900A-5	2×R7i	1013	1350	892	630	779	864	560	673	450
1110A-5	3×R7i	1249	1670	992	710	961	1066	710	830	560
1340A-5	3×R7i	1508	2010	1274	900	1160	1286	900	1002	710
1460A-5	4×R7i	1643	2190	1415	1000	1264	1402	1000	1092	710
1770A-5	4×R7i	1991	2660	1698	1200	1533	1699	1200	1324	900
U_N = 690 V										
0062A-7	R7i	70	93	62	55	74	60	55	46	45

Inverter unit type ACS880-104LC-	Frame size	Input ratings	Output ratings							
			I_{max}	No-overload use			Light-overload use		Heavy-duty use	
		I_1		I_2	P_N	S_N	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}
		A	A	A	kW	kVA	A	kW	A	kW
0082A-7	R7i	92	130	82	75	98	79	75	61	55
0100A-7	R7i	111	150	99	90	118	95	90	74	55
0130A-7	R7i	141	190	125	110	149	120	110	94	75
0140A-7	R7i	162	220	144	132	172	138	132	108	90
0190A-7	R7i	216	290	192	160	229	184	160	144	132
0220A-7	R7i	244	330	217	200	259	208	200	162	160
0290A-7	R7i	325	440	289	250	345	277	250	216	200
0340A-7	R7i	383	510	340	315	406	326	250	254	200
0389A-7	R7i	439	590	390	355	466	374	355	292	250
0390A-7	R8i	439	590	390	355	466	374	355	292	250
0430A-7	R8i	484	650	430	400	514	413	355	322	250
0480A-7	R8i	540	720	480	450	574	461	400	359	315
0530A-7	R8i	596	800	530	500	633	509	450	396	355
0600A-7	R8i	675	900	600	560	717	576	560	449	400
0670A-7	R8i	754	1010	670	630	801	643	630	501	450
0750A-7	R8i	844	1130	750	710	896	720	710	561	500
0850A-7	R8i	956	1280	850	800	1016	816	800	636	560
1030A-7	2×R8i	1159	1550	1030	1000	1231	989	900	770	710
1170A-7	2×R8i	1316	1760	1170	1100	1398	1123	1100	875	800
1310A-7	2×R8i	1474	1970	1310	1200	1566	1258	1200	980	900
1470A-7	2×R8i	1654	2210	1470	1400	1757	1411	1200	1100	1000
1660A-7	2×R8i	1868	2490	1660	1600	1984	1594	1400	1242	1200
1940A-7	3×R8i	2183	2910	1940	1800	2319	1862	1800	1451	1400
2180A-7	3×R8i	2453	3270	2180	2000	2605	2093	2000	1631	1400
2470A-7	3×R8i	2779	3710	2470	2300	2952	2371	2300	1848	1800
2880A-7	4×R8i	3240	4320	2880	2700	3442	2765	2700	2154	2000
3260A-7	4×R8i	3668	4890	3260	3000	3896	3130	3000	2438	2300
Units consisting of parallel-connected R7i modules See chapter Frame R7i and multiples (page 176)										
0560A-7	2×R7i	630	840	560	500	669	538	500	419	400

Inverter unit type ACS880-104LC-	Frame size	Input ratings	Output ratings							
			I_{max}	No-overload use			Light-overload use		Heavy-duty use	
		I_1		I_2	P_N	S_N	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}
		A	A	A	kW	kVA	A	kW	A	kW
0660A-7	2×R7i	743	990	660	630	789	634	500	494	400
0760A-7	2×R7i	855	1140	760	710	908	730	710	568	500
0840A-7	3×R7i	945	1260	840	800	1004	806	800	628	500
0980A-7	3×R7i	1103	1470	980	900	1171	941	900	733	710
1130A-7	3×R7i	1271	1700	1130	1000	1350	1085	1000	845	800
1300A-7	4×R7i	1463	1950	1300	1200	1554	1248	1200	972	900
1490A-7	4×R7i	1676	2240	1490	1400	1781	1430	1400	1115	1000

Definitions

U_N	Nominal AC supply voltage of drive system
I_1	Nominal rms input current
I_2	Nominal output current (available continuously with no over-loading)
P_N	Typical motor power in no-overload use The horsepower ratings are typical NEMA motor sizes at 460 V (ACS880-104LC-xxxxA-5) and 575 V (ACS880-104LC-xxxxA-7) respectively.
S_N	Apparent power in no-overload use
I_{Ld}	Continuous rms output current allowing 10% overload for 1 minute every 5 minutes
P_{Ld}	Typical motor power in light-overload use
I_{max}	Maximum output current. Available for 10 seconds at start; otherwise as long as allowed by drive temperature.
I_{Hd}	Continuous rms output current allowing 50% overload for 1 minute every 5 minutes
P_{Hd}	Typical motor power in heavy-duty use

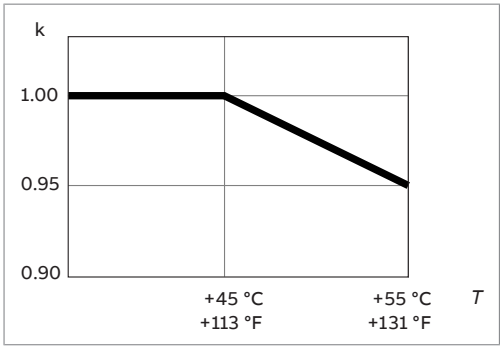
Note:

- The ratings apply at an ambient temperature of 40 °C (104 °F).
- The ratings apply at an ambient temperature of 45 °C (113 °F) and a coolant temperature of 40 °C (104 °F).
- To achieve the rated motor power given in the table, the rated current of the drive must be higher than or equal to the rated motor current.
- The DriveSize dimensioning tool available from ABB is recommended for selecting the drive, motor and gear combination.

Derating

Surrounding air temperature derating

In the temperature range +45…55 °C (+113…131 °F), the rated output current is derated by 0.5 percentage points for every added 1 °C (1.8 °F). The output current can be calculated by multiplying the current given in the rating table by the derating factor *(k)*:



Coolant temperature derating

See section Temperature limits (page 234).

Antifreeze content derating

See section Temperature limits (page 234).

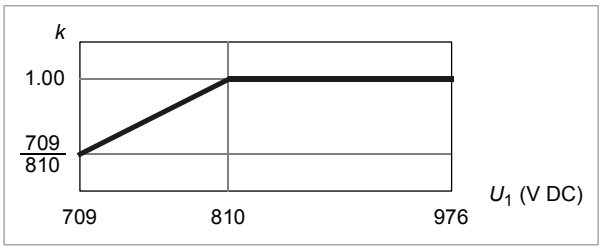
Altitude derating

At altitudes more than 1000 m (3281 ft) above sea level, the output current derating is 1 percentage point for every added 100 m (328 ft). For example, the derating factor for 1500 m (4921 ft) is 0.95. The maximum permitted installation altitude is given in the technical data.

For a more accurate derating, use the DriveSize PC tool.

Supply voltage derating (frame n×R8i inverter units with diode supply unit)

If the DC supply voltage of the inverter unit (U_1) is below 810 V (which corresponds to a drive supply voltage of 600 V AC when a diode supply unit is used), the rated output current must be derated by multiplying by $U_1/810$ (represented by *k* in the diagram).



Switching frequency derating

In the switching frequency range 3.0 … 7.5 kHz, the output current is derated by 8 percentage points for each kHz. For example, the derating factor for 5 kHz is 0.84.

Output frequency derating

Below the output frequency of 12 Hz, the output current is derated by 3.5 percentage points per each Hz. For example, the derating factor for 9 Hz is 0.895.

Above the output frequency of 150 Hz, the output current is derated by 1 percentage point per each 10 Hz. For example, the derating factor for 175 Hz is 0.975.

Note that this concerns continuous or frequent use in this frequency range. Temporary use in frequency range below 12 Hz does not cause need for derating.

Cooling characteristics

Inverter unit type ACS880-104LC-	Power loss [1]		Coolant volume		Coolant flow rate [2]	Pressure loss [3]
	Into coolant	Into air surrounding cabinet	Modules including heat exchanger	Cabinet piping including main pipes and manifolds		
	W	W	l (US qt)	l (US qt)	l/min (US gal/min)	kPa
U_N = 400 V						
0094A-3	900	20	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0120A-3	1100	20	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0140A-3	1300	20	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0170A-3	1500	20	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0210A-3	1900	30	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0250A-3	2400	40	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0300A-3	3100	40	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0380A-3	4300	60	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0470A-3	5900	70	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
Units consisting of parallel-connected R7i modules See chapter Frame R7i and multiples (page 176)						
0590A-3	6000	90	0.5 (0.5) [7]	1.9 (2.0) [5]	13 (3.4) [6]	120
0740A-3	8300	110	0.5 (0.5) [7]	1.9 (2.0) [5]	13 (3.4) [6]	120
0910A-3	11200	140	0.5 (0.5) [7]	1.9 (2.0) [5]	13 (3.4) [6]	120
1120A-3	12300	160	0.5 (0.5) [7]	1.9 (2.0) [5]	13 (3.4) [6]	120
1350A-3	17200	210	0.5 (0.5) [7]	1.9 (2.0) [5]	13 (3.4) [6]	120
1460A-3	16400	220	0.5 (0.5) [7]	1.9 (2.0) [5]	13 (3.4) [6]	120
1790A-3	22300	280	0.5 (0.5) [7]	1.9 (2.0) [5]	13 (3.4) [6]	120
U_N = 500 V						
0094A-5	970	20	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0120A-5	1200	20	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0140A-5	1500	20	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0170A-5	1700	30	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0200A-5	2000	30	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0240A-5	2500	40	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120
0300A-5	3300	50	0.5 (0.5) [4]	1.9 (2.0) [5]	13 (3.4) [6]	120

Inverter unit type ACS880-104LC-	Power loss[1]		Coolant volume		Coolant flow rate[2]	Pressure loss[3]
	Into coolant	Into air surrounding cabinet	Modules including heat exchanger	Cabinet piping including main pipes and manifolds		
	W	W	l (US qt)	l (US qt)	l/min (US gal/min)	kPa
0380A-5	4600	60	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
0460A-5	6100	80	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
Units consisting of parallel-connected R7i modules See chapter Frame R7i and multiples (page 176)						
0590A-5	6400	90	0.5 (0.5)[7]	1.9 (2.0)[5]	13 (3.4)[6]	120
0740A-5	8800	120	0.5 (0.5)[7]	1.9 (2.0)[5]	13 (3.4)[6]	120
0900A-5	11700	140	0.5 (0.5)[7]	1.9 (2.0)[5]	13 (3.4)[6]	120
1110A-5	13300	170	0.5 (0.5)[7]	1.9 (2.0)[5]	13 (3.4)[6]	120
1340A-5	17600	220	0.5 (0.5)[7]	1.9 (2.0)[5]	13 (3.4)[6]	120
1460A-5	17400	230	0.5 (0.5)[7]	1.9 (2.0)[5]	13 (3.4)[6]	120
1770A-5	23300	290	0.5 (0.5)[7]	1.9 (2.0)[5]	13 (3.4)[6]	120
U_N = 690 V						
0062A-7	1190	20	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
0082A-7	1470	20	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
0100A-7	1730	20	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
0130A-7	2100	30	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
0140A-7	2500	30	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
0190A-7	3300	40	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
0220A-7	3700	50	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
0290A-7	4600	60	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
0340A-7	5600	70	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
0389A-7	6700	80	0.5 (0.5)[4]	1.9 (2.0)[5]	13 (3.4)[6]	120
0390A-7	5000	100	1.9 (2.0)	2.4 (2.5)	16 (4.2)	120
0430A-7	5500	100	1.9 (2.0)	2.4 (2.5)	16 (4.2)	120
0480A-7	6200	200	1.9 (2.0)	2.4 (2.5)	16 (4.2)	120
0530A-7	7000	200	1.9 (2.0)	2.4 (2.5)	16 (4.2)	120
0600A-7	8000	200	1.9 (2.0)	2.4 (2.5)	16 (4.2)	120
0670A-7	9200	200	1.9 (2.0)	2.4 (2.5)	16 (4.2)	120
0750A-7	10500	300	1.9 (2.0)	2.4 (2.5)	16 (4.2)	120

Inverter unit type ACS880-104LC-	Power loss [1]		Coolant volume		Coolant flow rate [2]	Pressure loss [3]
	Into coolant	Into air surrounding cabinet	Modules including heat exchanger	Cabinet piping including main pipes and manifolds		
	W	W	l (US qt)	l (US qt)	l/min (US gal/min)	kPa
0850A-7	12400	300	1.9 (2.0)	2.4 (2.5)	16 (4.2)	120
1030A-7	13600	300	3.8 (4.0)	4.0 (4.2)	32 (8.5)	120
1170A-7	15600	400	3.8 (4.0)	4.0 (4.2)	32 (8.5)	120
1310A-7	17900	500	3.8 (4.0)	4.0 (4.2)	32 (8.5)	120
1470A-7	20600	500	3.8 (4.0)	4.0 (4.2)	32 (8.5)	120
1660A-7	24200	600	3.8 (4.0)	4.0 (4.2)	32 (8.5)	120
1940A-7	26500	700	5.7 (6.0)	5.7 (6.0)	48 (12.5)	120
2180A-7	30600	800	5.7 (6.0)	5.7 (6.0)	48 (12.5)	120
2470A-7	36000	900	5.7 (6.0)	5.7 (6.0)	48 (12.5)	120
2880A-7	40400	1000	7.6 (8.0)	8.0 (8.5)	64 (17)	120
3260A-7	47500	1200	7.6 (8.0)	8.0 (8.5)	64 (17)	120
Units consisting of parallel-connected R7i modules See chapter Frame R7i and multiples (page 176)						
0560A-7	8800	110	0.5 (0.5) [7]	1.9 (2.0) [5]	26 (6.9) [8]	120
0660A-7	10800	130	0.5 (0.5) [7]	1.9 (2.0) [5]	26 (6.9) [8]	120
0760A-7	13100	160	0.5 (0.5) [7]	1.9 (2.0) [5]	26 (6.9) [8]	120
0840A-7	13300	160	0.5 (0.5) [7]	1.9 (2.0) [5]	39 (10.3) [8]	120
0980A-7	16100	200	0.5 (0.5) [7]	1.9 (2.0) [5]	39 (10.3) [8]	120
1130A-7	19500	230	0.5 (0.5) [7]	1.9 (2.0) [5]	39 (10.3) [8]	120
1300A-7	21400	260	0.5 (0.5) [7]	1.9 (2.0) [5]	52 (13.7) [8]	120
1490A-7	25700	310	0.5 (0.5) [7]	1.9 (2.0) [5]	52 (13.7) [8]	120

1) These losses are not calculated according to IEC 61800-9-2.
2) The mass flow values are for modules only. Additional heat exchangers, which might be needed for cooling of cabinet, are not included in these mass flow values.
3) Per cubicle (applicable to designs presented in this manual).
4) Single-module cabinet configuration. 0.7 (0.75) for both modules combined in two-module cabinet configuration.
5) Single-module cabinet configuration. 2.5 (2.6) for two-module cabinet configuration.
6) Single-module cabinet configuration. 28 (7.4) for two-module cabinet configuration.
7) One module in single-module cabinet configuration. 0.7 (0.75) for both modules combined in two-module cabinet configuration.
8) One module in single-module cabinet configuration. 28 (7.4) for two modules in two-module cabinet configuration).

Modules used, noise, DC capacitance

Inverter unit type ACS880-104LC-	Inverter modules used		Noise level*	DC capacitance
	Qty	Type ACS880-104LC-	dB(A)	µF
U_N = 400 V				
0094A-3	1	0094A-3	63	4800
0120A-3	1	0120A-3	63	4800
0140A-3	1	0140A-3	63	4800
0170A-3	1	0170A-3	63	6400
0210A-3	1	0210A-3	63	6400
0250A-3	1	0250A-3	63	6400
0300A-3	1	0300A-3	63	6400
0380A-3	1	0380A-3	63	9600
0470A-3	1	0470A-3	63	9600
0590A-3	2	0300A-3	66	19200
0740A-3	2	0380A-3	66	19200
0910A-3	2	0470A-3	66	19200
1120A-3	3	0380A-3	68	28800
1350A-3	3	0470A-3	68	28800
1460A-3	4	0380A-3	69	38400
1790A-3	4	0470A-3	69	38400
U_N = 500 V				
0094A-5	1	0094A-5	63	4800
0120A-5	1	0120A-5	63	4800
0140A-5	1	0140A-5	63	4800
0170A-5	1	0170A-5	63	6400
0200A-5	1	0200A-5	63	6400
0240A-5	1	0240A-5	63	6400
0300A-5	1	0300A-5	63	6400
0380A-5	1	0380A-5	63	9600
0460A-5	1	0460A-5	63	9600

Inverter unit type ACS880-104LC-	Inverter modules used		Noise level*	DC capacitance
	Qty	Type ACS880-104LC-	dB(A)	µF
0590A-5	2	0300A-5	66	19200
0740A-5	2	0380A-5	66	19200
0900A-5	2	0460A-5	66	19200
1110A-5	3	0380A-5	68	28800
1340A-5	3	0460A-5	68	28800
1460A-5	4	0380A-5	69	38400
1770A-5	4	0460A-5	69	38400
U_N = 690 V				
0062A-7	1	0062A-7	63	2130
0082A-7	1	0082A-7	63	2130
0100A-7	1	0100A-7	63	2130
0130A-7	1	0130A-7	63	2130
0140A-7	1	0140A-7	63	2130
0190A-7	1	0190A-7	63	3200
0220A-7	1	0220A-7	63	3200
0290A-7	1	0290A-7	63	5330
0340A-7	1	0340A-7	63	5330
0389A-7	1	0389A-7	63	5330
0390A-7	1	0390A-7	63	6000
0430A-7	1	0430A-7	63	6000
0480A-7	1	0480A-7	63	6000
0530A-7	1	0530A-7	63	6000
0600A-7	1	0600A-7	63	9000
0670A-7	1	0670A-7	63	9000
0750A-7	1	0750A-7	63	9000
0850A-7	1	0850A-7	63	9000
1030A-7	2	0530A-7	66	12000
1170A-7	2	0600A-7	66	18000
1310A-7	2	0670A-7	66	18000
1470A-7	2	0750A-7	66	18000
1660A-7	2	0850A-7	66	18000
1940A-7	3	0670A-7	68	27000

Inverter unit type ACS880-104LC-	Inverter modules used		Noise level*	DC capacitance
	Qty	Type ACS880-104LC-	dB(A)	µF
2180A-7	3	0750A-7	68	27000
2470A-7	3	0850A-7	68	27000
2880A-7	4	0750A-7	69	36000
3260A-7	4	0850A-7	69	36000
Units consisting of parallel-connected R7i modules See chapter Frame R7i and multiples (page 176)				
0560A-7	2	0290A-7	63	10670
0660A-7	2	0340A-7	63	10670
0760A-7	2	0389A-7	63	10670
0840A-7	3	0290A-7	63	16000
0980A-7	3	0340A-7	63	16000
1130A-7	3	0389A-7	63	16000
1300A-7	4	0340A-7	63	21330
1490A-7	4	0389A-7	63	21330

*Measured in a typical ABB (ACS880-107LC) cabinet installation.

Dimensions and weights

The weights of the ACS880-104LC modules are shown below. For the dimensions, see chapter Dimension drawings.

Module type	Weight (+E205)	
	kg	lbs
ACS880-104LC-0094A-3 … -0140A-3 ACS880-104LC-0094A-5 … -0140A-5 ACS880-104LC-0062A-7 … -0140A-7	37	82
ACS880-104LC-0170A-3 … -0250A-3 ACS880-104LC-0170A-5 … -0240A-5 ACS880-104LC-0190A-7 … -0220A-7	38	84
ACS880-104LC-0300A-3 … -0470A-3 ACS880-104LC-0300A-5 … -0460A-5	40	88
ACS880-104LC-0290A-7 … -0389A-7	41	90
ACS880-104LC-0390A-7 … -0530A-7	59	130
ACS880-104LC-0600A-7 … -0850A-7	63	139

Free space required by cooling

Frame R7i

- Left and right sides, below, above, back: None, but the return flow of air must not be restricted.
- Front: Space needed by coolant piping.

Frame R8i

- Left and right sides, back: None, but the return flow of air must not be restricted.
- Front: Space needed by coolant piping.
- Below: Space needed by heat exchanger and cooling fan.
- Above: The cooling air flow through the module should not be restricted.

For an example, see layout drawings.

Allowable mounting positions

- Upright
- On left-hand side (viewed from the front)

Typical power cable sizes

The tables below give current carrying capacity (I_{Lmax}) for aluminum and copper4 PVC/XLPE insulated cables. A correction factor K = 0.70 is used. Time const is the4 temperature time constant of the cable.

The cable sizing is based on max. 9 cables laid on the cable trays side by side, three4 ladder type trays one on top of the other, ambient temperature 30 °C (EN 60204-1 and4 IEC 60364-5-52).

Aluminum cable		**PVC insulation Conductor temperature 70 °C**		**XLPE insulation Conductor temperature 90 °C**	
Size	**Ø [mm]**	**I_{Lmax} [A]**	**Time const. [s]**	**I_{Lmax} [A]**	**Time const. [s]**
3 × 35 + 10 Cu	26	67	736	84	669
3 × 50 + 15 Cu	29	82	959	102	874
3 × 70 + 21 Cu	32	105	1182	131	1079
3 × 95 + 29 Cu	38	128	1492	159	1376
3 × 120 + 41 Cu	41	148	1776	184	1637
3 × 150 + 41 Cu	44	171	2042	213	1881
3 × 185 + 57 Cu	49	196	2422	243	2237
3 × 240 + 72 Cu	54	231	2967	286	2740
3 × 300 + 88 Cu	58	267	3478	330	3229
2 × (3 × 70 + 21 Cu)	2 × 32	210	1182	262	1079
2 × (3 × 95 + 29 Cu)	2 × 38	256	1492	318	1376
2 × (3 × 120 + 41 Cu)	2 × 41	297	1776	368	1637
2 × (3 × 150 + 41 Cu)	2 × 44	343	2042	425	1881
2 × (3 × 185 + 57 Cu)	2 × 49	392	2422	486	2237
2 × (3 × 240 + 72 Cu)	2 × 54	462	2967	572	2740
2 × (3 × 300 + 88 Cu)	2 × 58	533	3478	659	3229
3 × (3 × 150 + 41 Cu)	3 × 44	514	2042	638	1881
3 × (3 × 185 + 57 Cu)	3 × 49	588	2422	728	2237
3 × (3 × 240 + 72 Cu)	3 × 54	693	2967	859	2740
3 × (3 × 300 + 88 Cu)	3 × 58	800	3478	989	3229
4 × (3 × 185 + 57 Cu)	4 × 49	784	2422	971	2237
4 × (3 × 240 + 72 Cu)	4 × 54	924	2967	1145	2740
4 × (3 × 300 + 88 Cu)	4 × 58	1067	3478	1319	3229
5 × (3 × 185 + 57 Cu)	5 × 49	980	2422	1214	2237
5 × (3 × 240 + 72 Cu)	5 × 54	1155	2967	1431	2740
5 × (3 × 300 + 88 Cu)	5 × 58	1333	3478	1648	3229
6 × (3 × 240 + 72 Cu)	6 × 54	1386	2967	1718	2740
6 × (3 × 300 + 88 Cu)	6 × 58	1600	3478	1978	3229
7 × (3 × 240 + 72 Cu)	7 × 54	1617	2967	2004	2740
7 × (3 × 300 + 88 Cu)	7 × 58	1867	3478	2308	3229
8 × (3 × 240 + 72 Cu)	8 × 54	1848	2967	2290	2740
8 × (3 × 300 + 88 Cu)	8 × 58	2133	3478	2637	3229
9 × (3 × 240 + 72 Cu)	9 × 54	2079	2967	2577	2740
9 × (3 × 300 + 88 Cu)	9 × 58	2400	3478	2967	3229
10 × (3 × 240 + 72 Cu)	10 × 54	2310	2967	2867	2740
10 × (3 × 300 + 88 Cu)	10 × 58	2667	3478	3297	3229

Copper cable		PVC insulation Conductor temperature 70 °C		XLPE insulation Conductor temperature 90 °C	
Size	**Ø [mm]**	**I_{Lmax} [A]**	**Time const. [s]**	**I_{Lmax} [A]**	**Time const. [s]**
3 × 1.5 + 1.5	13	13	85	16	67
3 × 2.5 + 2.5	14	18	121	23	88
(3 × 4 + 4)	16	24	175	30	133
3 × 6 + 6	18	30	251	38	186
3 × 10 + 10	21	42	359	53	268
3 × 16 + 16	23	56	514	70	391
3 × 25 + 16	24	71	791	89	598
3 × 35 + 16	26	88	1000	110	760
3 × 50 + 25	29	107	1308	134	990
3 × 70 + 35	32	137	1613	171	1230
3 × 95 + 50	38	167	2046	209	1551
3 × 120 + 70	41	193	2441	241	1859
3 × 150 + 70	44	223	2820	279	2139
3 × 185 + 95	50	255	3329	319	2525
3 × 240 + 120	55	301	4073	376	3099
3 × 300 + 150	58	348	4779	435	3636
2 × (3 × 70 + 35)	2 × 32	274	1613	342	1230
2 × (3 × 95 + 50)	2 × 38	334	2046	418	1551
2 × (3 × 120 + 70)	2 × 41	386	2441	482	1859
2 × (3 × 150 + 70)	2 × 44	446	2820	558	2139
2 × (3 × 185 + 95)	2 × 50	510	3329	638	2525
2 × (3 × 240 + 120)	2 × 55	602	4073	752	3099
2 × (3 × 300 + 150)	2 × 58	696	4779	869	3636
3 × (3 × 120 + 70)	3 × 41	579	2441	723	1859
3 × (3 × 150 + 70)	3 × 44	669	2820	837	2139
3 × (3 × 185 + 95)	3 × 50	765	3329	957	2525
3 × (3 × 240 + 120)	3 × 55	903	4073	1128	3099
3 × (3 × 300 + 150)	3 × 58	1044	4779	1304	3636
4 × (3 × 150 + 70)	4 × 44	892	2820	1116	2139
4 × (3 × 185 + 95)	4 × 50	1020	3329	1276	2525
4 × (3 × 240 + 120)	4 × 55	1204	4073	1504	3099
4 × (3 × 300 + 150)	4 × 58	1391	4779	1304	3636
5 × (3 × 185 + 95)	5 × 50	1275	3329	1595	2525
5 × (3 × 240 + 120)	5 × 55	1505	4073	1880	3099
5 × (3 × 300 + 150)	5 × 58	1739	4779	2173	3636
6 × (3 × 185 + 95)	6 × 50	1530	3329	1914	2525
6 × (3 × 240 + 120)	6 × 55	1806	4073	2256	3099
6 × (3 × 300 + 150)	6 × 58	2087	4779	2608	3636
7 × (3 × 240 + 120)	7 × 55	2107	4073	2632	3099
7 × (3 × 300 + 150)	7 × 58	2435	4779	3043	3636
8 × (3 × 240 + 120)	8 × 55	2408	4073	3008	3099
8 × (3 × 300 + 150)	8 × 58	2783	4779	3477	3636

Materials

Module

Refer to Recycling instructions and environmental information for ACS880 cabinet-installed drives and multidrive modules (3AXD50000153909 [English]).

Packaging of module

This is a complete list of the package materials. The materials vary depending on the frame size (packages do not contain all materials listed below).

- Cardboard (heavy duty quality with wet strength glue in large modules)
- Molded pulp
- Plywood
- Wood
- PP (strapping)
- EPP (foam)
- PE (plastic bag and/or VCI film)
- Metal (fixing clamps, screws).

Packaging of options

- Cardboard
- Kraft paper
- PP (straps)
- PE (film, bubble wrap)
- Plywood, wood (only for heavy components).

Materials vary according to the item type, size and shape. Typical package consists of a cardboard box with paper filling or bubble wrap. ESD-safe packing materials are used for printed circuit boards and similar items.

Manuals

Printed product manuals are made of recyclable paper. Product manuals are available on the Internet.

Disposal

The main parts of the drive can be recycled to preserve natural resources and energy. Product parts and materials should be dismantled and separated.

Generally all metals, such as steel, aluminum, copper and its alloys, and precious metals can be recycled as material. Plastics, rubber, cardboard and other packaging material can be used in energy recovery.

Printed circuit boards and DC capacitors need selective treatment according to IEC 62635 guidelines.

To aid recycling, most plastic parts are marked with an appropriate identification code. In addition, components containing substances of very high concern (SVHCs) are listed in European Chemicals Agency's SCIP database. SCIP is the database for

information on Substances of Concern In articles as such or in complex objects (Products) established under the Waste Framework Directive (2008/98/EC). For further4 information, contact your local ABB distributor or consult European Chemicals Agency's4 SCIP database to find out which SVHCs are used in the drive, and to find out where4 those components are located.

Contact your local ABB distributor for further information on environmental aspects.4 End of life treatment must follow international and national regulations.

Tightening torques

For Rittal components, use the torques given in the Rittal assembly documentation.4

Unless a tightening torque is specified in the text, the following torques can be used.

Electrical connections

Size	Torque	Strength class
M3	0.5 N·m (4.4 lbf·in)	4.6...8.8
M4	1 N·m (9 lbf·in)	4.6...8.8
M5	4 N·m (35 lbf·in)	8.8
M6	9 N·m (6.6 lbf·ft)	8.8
M8	22 N·m (16 lbf·ft)	8.8
M10	42 N·m (31 lbf·ft)	8.8
M12	70 N·m (52 lbf·ft)	8.8
M16	120 N·m (90 lbf·ft)	8.8

Mechanical connections

Size	Max. torque	Strength class
M5	6 N·m (53 lbf·in)	8.8
M6	10 N·m (7.4 lbf·ft)	8.8
M8	24 N·m (17.7 lbf·ft)	8.8

Insulation supports

Size	Max. torque	Strength class
M6	5 N·m (44 lbf·in)	8.8
M8	9 N·m (6.6 lbf·ft)	8.8
M10	18 N·m (13.3 lbf·ft)	8.8
M12	31 N·m (23 lbf·ft)	8.8

Cable lugs

Size	Max. torque	Strength class
M8	15 N·m (11 lbf·ft)	8.8 (A2-70 or A4-70)
M10	32 N·m (23.5 lbf·ft)	8.8
M12	50 N·m (37 lbf·ft)	8.8

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