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# ПРОМЫШЛЕННЫЕ ПРИВОДЫ

## Техническое описание на преобразователи ACS880-07CLC



# Operation principle and hardware description

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## Contents of this chapter

This chapter briefly describes the operation principle and construction of the drive.

## Operation principle

The ACS880-07CLC is a liquid-cooled cabinet-installed drive for controlling asynchronous AC induction motors, permanent magnet synchronous motors and AC induction servomotors.

The drive consists of several cubicles that contain the supply and motor terminals, 1 to 8 diode supply module(s), 1 to 8 inverter modules, and optional equipment. The actual arrangement of the cubicles varies from type to type and the selected options.

The diode supply unit of the drive is uncontrolled: it cannot control the DC link voltage or limit the charging current of the DC link capacitors at the power-up.

### Notes:

- The installer must provide an external main disconnecting device which meets the local safety regulations.
  - The installer must provide an external main contactor or breaker as the drive does not have an internal main contactor or breaker.
  - The installer must either provide an external charging circuit, or specify option +F272 for a built-in charging circuit. The external charging circuit can, for example, be combined into one unit that also magnetizes the supply transformer.
  - The supply unit of the drive does not have the means to control, limit or cut off the load current.
- 
- The installer must arrange for overload and short-circuit protection of the supply cable, typically with fuses.
  - The supply unit of the drive does not have AC or DC chokes. Therefore, the installer must arrange for a sufficient inductance at the AC side of each supply module with suitable cabling. The minimum length of the supply cable per each supply module is 5 meters (16.4 feet). The inductances between the parallel-connected supply modules must be identical, ie. the cabling to each module must be identical in regard to cable type and length.

### ■ Charging

A charging circuit powers up the DC capacitors of the drive smoothly. Discharged capacitors cannot be directly connected to full supply voltage. The charging current must be limited until the capacitors are charged and ready for normal use.

An internal charging circuit is available by specifying option +F272. Drives with +F272 have a charging switch on the supply unit cubicle door as well as terminals for the connection of a 3-phase supply for the charging circuit.

Drives without +F272 must be charged through an external charging circuit. If practical, the circuit can be combined with the transformer magnetizing circuit.

# Technical data

## Contents of this chapter

This chapter contains the technical specifications of the drive, for example, the ratings, fuse data, sizes and technical requirements, provisions for fulfilling the requirements for CE and other markings.

## Ratings

The nominal ratings for the drives with 50 Hz and 60 Hz supply are given below. The definitions are described below the table.

ACS880-07CLC-...	Input rating	Output ratings										
		No-overload use					Light-overload use			Heavy-duty use		
	$I_1$	$I_2$	$I_{max}$	$P_N$		$S_N$	$I_{Ld}$	$P_{Ld}$		$I_{Hd}$	$P_{Hd}$	
	A	A	A	kW	hp	kVA	A	kW	hp	A	kW	hp
<b><math>U_N = 690</math> V, 6-pulse connection</b>												
0390A-7	357	390	585	355	400	466	374	355	350	292	250	300
0430A-7	394	430	645	400	450	514	413	355	450	322	250	300
0480A-7	439	480	720	450	500	574	461	400	450	359	315	350
0530A-7	485	530	795	500	550	633	509	450	500	396	355	400
0600A-7	549	600	900	560	600	717	576	560	600	449	400	450
0670A-7	613	670	1005	630	700	801	643	630	700	501	450	500
0750A-7	686	750	1125	710	800	896	720	710	700	561	500	600
0850A-7	778	850	1275	800	900	1016	816	800	900	636	560	600
1030A-7	943	1030	1545	1000	1000	1231	989	900	1000	770	710	800
1170A-7	1071	1170	1755	1100	1250	1398	1123	1100	1250	875	800	900
1310A-7	1199	1310	1965	1200	1250	1566	1258	1200	1250	980	900	1000

ACS880-07CLC-...	Input rating	Output ratings											
		No-overload use					Light-overload use			Heavy-duty use			
		$I_1$	$I_2$	$I_{max}$	$P_N$		$S_N$	$I_{Ld}$	$P_{Ld}$		$I_{Hd}$	$P_{Hd}$	
		A	A	A	kW	hp	kVA	A	kW	hp	A	kW	hp
1470A-7	1345	1470	2205	1400	1500	1757	1411	1200	1500	1100	1000	1000	
1660A-7	1519	1660	2490	1600	1750	1984	1594	1400	1750	1242	1200	1250	
1940A-7	1775	1940	2910	1800	2000	2319	1862	1800	2000	1451	1400	1500	
2180A-7	1995	2180	3270	2000		2605	2093	2000		1631	1400	1750	
2470A-7	2261	2470	3705	2300		2952	2371	2300		1848	1800	2000	
2880A-7	2636	2880	4320	2700		3442	2765	2700		2154	2000		
3260A-7	2984	3260	4890	3000		3896	3130	3000		2438	2300		
<b><math>U_N = 690</math> V, 12-pulse connection</b>													
0530A-7+A004	485	530	795	500	550	633	509	450	500	396	355	400	
0600A-7+A004	549	600	900	560	600	717	576	560	600	449	400	450	
0670A-7+A004	613	670	1005	630	700	801	643	630	700	501	450	500	
0750A-7+A004	686	750	1125	710	800	896	720	710	700	561	500	600	
0850A-7+A004	778	850	1275	800	900	1016	816	800	900	636	560	600	
1030A-7+A004	943	1030	1545	1000	1000	1231	989	900	1000	770	710	800	
1170A-7+A004	1071	1170	1755	1100	1250	1398	1123	1100	1250	875	800	900	
1310A-7+A004	1199	1310	1965	1200	1250	1566	1258	1200	1250	980	900	1000	
1470A-7+A004	1345	1470	2205	1400	1500	1757	1411	1200	1500	1100	1000	1000	
1660A-7+A004	1519	1660	2490	1600	1750	1984	1594	1400	1750	1242	1200	1250	
1940A-7+A004	1775	1940	2910	1800	2000	2319	1862	1800	2000	1451	1400	1500	
2180A-7+A004	1995	2180	3270	2000		2605	2093	2000	TBA	1631	1400	1750	
2470A-7+A004	2261	2470	3705	2300		2952	2371	2300	TBA	1848	1800	2000	
2880A-7+A004	2636	2880	4320	2700		3442	2765	2700	TBA	2154	2000		
3260A-7+A004	2984	3260	4890	3000		3896	3130	3000	TBA	2438	2300		
3580A-7+A004	3276	3580	5370	3400		4279	3437	3200	TBA	2678	2600		
4050A-7+A004	3707	4050	6075	3800		4840	3888	3800	TBA	3029	2800		
4840A-7+A004	4430	4840	7260	4400		5784	4646	4400	TBA	3620	3500		
5650A-7+A004	5171	5650	8475	5200		6752	5424	5200	TBA	4226	4000		
6460A-7+A004	5912	6460	9690	6000		7720	6202	6000	TBA	4832	4700		
<b><math>U_N = 690</math> V, 24-pulse connection</b>													
2470A-7+A006	2261	2470	3705	2300		2952	2371	2300		1848	1800		
3260A-7+A006	2984	3260	4890	3000		3896	3130	3000		2438	2300		
4840A-7+A006	4430	4840	7260	4400		5784	4646	4400		3620	3500		
5650A-7+A006	5171	5650	8475	5200		6752	5424	5200		4226	4000		
6460A-7+A006	5912	6460	9690	6000		7720	6202	6000		4832	4700		

## ■ Definitions

$U_N$	Supply voltage range
$I_1$	Nominal rms input current
$I_2$	Nominal output current (available continuously with no over-loading)
$I_{max}$	Maximum output current. Available for 10 seconds at start, then as long as allowed by drive temperature.
$P_N$	Typical motor power in no-overload use.
$S_N$	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
$I_{Hd}$	Continuous rms output current allowing 50% overload for 1 minute every 5 minutes
$P_{Hd}$	Typical motor power in heavy-duty use

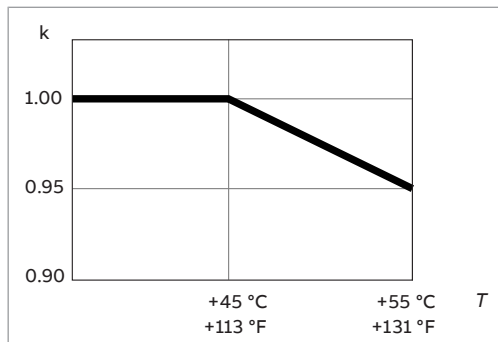
**Note 1:** The ratings apply at an ambient air temperature of 45 °C (113 °F) and a coolant temperature of 40 °C (104 °F).

**Note 2:** 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 176).

### Antifreeze content derating

See section [Temperature limits](#) (page 176).

### Altitude derating

At altitudes from 0 to 2000 m (0 to 6562 ft), no derating is required. For altitudes above 2000 m (6562 ft), contact ABB.

### 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.

## Frame sizes and power module types

ACS880-07CLC-...	Frame size	Supply modules used		Inverter modules used	
		Qty	Type	Qty	Type
<b><math>U_N = 690 \text{ V}</math>, 6-pulse connection</b>					
0390A-7	1xD8D + 1xR8i	1	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0390A-7
0430A-7	1xD8D + 1xR8i	1	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0430A-7
0480A-7	1xD8D + 1xR8i	1	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0480A-7
0530A-7	1xD8D + 1xR8i	1	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0530A-7
0600A-7	1xD8D + 1xR8i	1	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0600A-7
0670A-7	1xD8D + 1xR8i	1	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0670A-7
0750A-7	1xD8D + 1xR8i	1	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0750A-7
0850A-7	1xD8D + 1xR8i	1	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0850A-7
1030A-7	2xD8D + 2xR8i	2	ACS880-304LC-0820A-7+A019	2	ACS880-104LC-0530A-7
1170A-7	2xD8D + 2xR8i	2	ACS880-304LC-0820A-7+A019	2	ACS880-104LC-0600A-7
1310A-7	2xD8D + 2xR8i	2	ACS880-304LC-0820A-7+A019	2	ACS880-104LC-0670A-7
1470A-7	2xD8D + 2xR8i	2	ACS880-304LC-0820A-7+A019	2	ACS880-104LC-0750A-7
1660A-7	2xD8D + 2xR8i	2	ACS880-304LC-0820A-7+A019	2	ACS880-104LC-0850A-7
1940A-7	3xD8D + 3xR8i	3	ACS880-304LC-0820A-7+A019	3	ACS880-104LC-0670A-7
2180A-7	3xD8D + 3xR8i	3	ACS880-304LC-0820A-7+A019	3	ACS880-104LC-0750A-7
2470A-7	3xD8D + 3xR8i	3	ACS880-304LC-0820A-7+A019	3	ACS880-104LC-0850A-7
2880A-7	4xD8D + 4xR8i	4	ACS880-304LC-0820A-7+A019	4	ACS880-104LC-0750A-7
3260A-7	4xD8D + 4xR8i	4	ACS880-304LC-0820A-7+A019	4	ACS880-104LC-0850A-7
<b><math>U_N = 690 \text{ V}</math>, 12-pulse connection</b>					
0530A-7+A004	2xD8D + 1xR8i	2	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0530A-7
0600A-7+A004	2xD8D + 1xR8i	2	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0600A-7
0670A-7+A004	2xD8D + 1xR8i	2	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0670A-7
0750A-7+A004	2xD8D + 1xR8i	2	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0750A-7

ACS880-07CLC-...	Frame size	Supply modules used		Inverter modules used	
		Qty	Type	Qty	Type
0850A-7+A004	2×D8D + 1×R8i	2	ACS880-304LC-0820A-7+A019	1	ACS880-104LC-0850A-7
1030A-7+A004	2×D8D + 2×R8i	2	ACS880-304LC-0820A-7+A019	2	ACS880-104LC-0530A-7
1170A-7+A004	2×D8D + 2×R8i	2	ACS880-304LC-0820A-7+A019	2	ACS880-104LC-0600A-7
1310A-7+A004	2×D8D + 2×R8i	2	ACS880-304LC-0820A-7+A019	2	ACS880-104LC-0670A-7
1470A-7+A004	2×D8D + 2×R8i	2	ACS880-304LC-0820A-7+A019	2	ACS880-104LC-0750A-7
1660A-7+A004	2×D8D + 2×R8i	2	ACS880-304LC-0820A-7+A019	2	ACS880-104LC-0850A-7
1940A-7+A004	4×D8D + 3×R8i	4	ACS880-304LC-0820A-7+A019	3	ACS880-104LC-0670A-7
2180A-7+A004	4×D8D + 3×R8i	4	ACS880-304LC-0820A-7+A019	3	ACS880-104LC-0750A-7
2470A-7+A004	4×D8D + 3×R8i	4	ACS880-304LC-0820A-7+A019	3	ACS880-104LC-0850A-7
2880A-7+A004	4×D8D + 4×R8i	4	ACS880-304LC-0820A-7+A019	4	ACS880-104LC-0750A-7
3260A-7+A004	4×D8D + 4×R8i	4	ACS880-304LC-0820A-7+A019	4	ACS880-104LC-0850A-7
3580A-7+A004	6×D8D + 5×R8i	6	ACS880-304LC-0820A-7+A019	5	ACS880-104LC-0750A-7
4050A-7+A004	6×D8D + 5×R8i	6	ACS880-304LC-0820A-7+A019	5	ACS880-104LC-0850A-7
4840A-7+A004	6×D8D + 6×R8i	6	ACS880-304LC-0820A-7+A019	6	ACS880-104LC-0850A-7
5650A-7+A004	8×D8D + 7×R8i	8	ACS880-304LC-0820A-7+A019	7	ACS880-104LC-0850A-7
6460A-7+A004	8×D8D + 8×R8i	8	ACS880-304LC-0820A-7+A019	8	ACS880-104LC-0850A-7
<b><math>U_N = 690</math> V, 24-pulse connection</b>					
2470A-7+A006	4×D8D + 3×R8i	4	ACS880-304LC-0820A-7+A019	3	ACS880-104LC-0850A-7
3260A-7+A006	4×D8D + 4×R8i	4	ACS880-304LC-0820A-7+A019	4	ACS880-104LC-0850A-7
4840A-7+A006	8×D8D + 6×R8i	8	ACS880-304LC-0820A-7+A019	6	ACS880-104LC-0850A-7
5650A-7+A006	8×D8D + 7×R8i	8	ACS880-304LC-0820A-7+A019	7	ACS880-104LC-0850A-7
6460A-7+A006	8×D8D + 8×R8i	8	ACS880-304LC-0820A-7+A019	8	ACS880-104LC-0850A-7

# Fuses

## ■ AC fuses

### Notes:

- Fuses with higher current rating than the recommended ones must not be used.
- Fuses from other manufacturers can be used if they meet the ratings and the melting curve of the fuse does not exceed the melting curve of the fuse mentioned in the table.

ACS880-07CLC-...	Ultrarapid (aR) fuses at supply module input					
	Qty	A	A <sup>2</sup> s at 660 V	V	Manufacturer	Type
<b>U<sub>N</sub> = 690 V, 6-pulse connection</b>						
0390A...0850A-7	3	1400	2450000	690	Bussmann	170M6467
1030A...1660A-7	6					
1940A...2470A-7	9					
2880A...3260A-7	12					
<b>U<sub>N</sub> = 690 V, 12-pulse connection</b>						
0530A...1660A-7+A004	6	1400	2450000	690	Bussmann	170M6467
1940A...3260A-7+A004	12					
3580A...4840A-7+A004	18					
5650A...6460A-7+A004	24					
<b>U<sub>N</sub> = 690 V, 24-pulse connection</b>						
2470A...3260A-7+A006	12	1400	2450000	690	Bussmann	170M6467
4840A...6460A-7+A006	24					

## ■ DC fuses

The drive has DC fuses at the input of each inverter module.

### Notes:

- Fuses with higher current rating than the recommended ones must not be used.
- Fuses from other manufacturers can be used if they meet the ratings and the melting curve of the fuse does not exceed the melting curve of the fuse mentioned in the table.

ACS880-07CLC-...	DC fuses at inverter module input				
	Qty	A	V	Manufacturer	Type
<b>U<sub>N</sub> = 690 V, 6-pulse connection</b>					
0390A-7	2	800	1250	Bussmann	170M6546
0430A-7					
0480A-7	2	900	1100	Bussmann	170M6547



ACS880-07CLC-...	DC fuses at inverter module input				
	Qty	A	V	Manufacturer	Type
0530A-7	2	1000	1100	Bussmann	170M6548
0600A-7	2	1100	1000	Bussmann	170M6549
0670A-7	2	1250	1100	Bussmann	170M6500
0750A-7	2	1400	1100	Bussmann	170M6501
0850A-7					
1030A-7	4	1000	1100	Bussmann	170M6548
1170A-7	4	1100	1000	Bussmann	170M6549
1310A-7	4	1250	1100	Bussmann	170M6500
1470A-7	4	1400	1100	Bussmann	170M6501
1660A-7	4				
1940A-7	6	1250	1100	Bussmann	170M6500
2180A-7	6	1400	1100	Bussmann	170M6501
2470A-7	6				
2880A-7	8				
3260A-7	8				
<b><math>U_N = 690\text{ V}</math>, 12-pulse connection</b>					
0530A-7+A004	2	1000	1100	Bussmann	170M6548
0600A-7+A004	2	1100	1000	Bussmann	170M6549
0670A-7+A004	2	1250	1100	Bussmann	170M6500
0750A-7+A004	2	1400	1100	Bussmann	170M6501
0850A-7+A004					
1030A-7+A004	4	1000	1100	Bussmann	170M6548
1170A-7+A004	4	1100	1000	Bussmann	170M6549
1310A-7+A004	4	1250	1100	Bussmann	170M6500
1470A-7+A004	4	1400	1100	Bussmann	170M6501
1660A-7+A004					
1940A-7+A004	6	1250	1100	Bussmann	170M6500
2180A-7+A004	6	1400	1100	Bussmann	170M6501
2470A-7+A004	6				
2880A-7+A004	8				
3260A-7+A004	8				
3580A-7+A004	10				
4050A-7+A004	10				
4840A-7+A004	12				
5650A-7+A004	14				
6460A-7+A004	16				
<b><math>U_N = 690\text{ V}</math>, 24-pulse connection</b>					

ACS880-07CLC-...	DC fuses at inverter module input				
	Qty	A	V	Manufacturer	Type
2470A-7+A006	6	1400	1100	Bussmann	170M6501
3260A-7+A006	8				
4840A-7+A006	12				
5650A-7+A006	14				
6460A-7+A006	16				

### ■ Brake chopper DC fuses

Optional (+D150) single-phase brake choppers have two DC fuses each. The fuse type is Bussmann 170M5146 (630 A 1250 V).

For the fuses of three-phase dynamic brake units, see ACS880-607LC 3-phase dynamic brake units hardware manual (3AXD50000581627 [English]).

## Dimensions and weights

See chapter Dimensions (page 211).

## Free space requirements

The values are as required by cooling, maintenance and/or operation of the pressure relief (if present). Also obey the general mechanical installation instructions.

Front		Sides		Above	
mm	in.	mm	in.	mm	in.
1000	39	0	0	250	9.85

## Cooling data and noise

ACS880-07CLC-...	Coolant flow		Heat dissipation	Noise
	l/min	US gal/min	kW	dB(A)
<b><math>U_N = 690</math> V, 6-pulse connection</b>				
0390A-7	28	7.4	8.6	67
0430A-7	28	7.4	9.3	67
0480A-7	28	7.4	10	67
0530A-7	28	7.4	11	67
0600A-7	28	7.4	13	67
0670A-7	28	7.4	14	67
0750A-7	28	7.4	16	67
0850A-7	28	7.4	18	67
1030A-7	54	14.3	22	69
1170A-7	54	14.3	25	69
1310A-7	54	14.3	27	69
1470A-7	54	14.3	31	69
1660A-7	54	14.3	35	69

ACS880-07CLC-...	Coolant flow		Heat dissipation	Noise
	l/min	US gal/min	kW	dB(A)
1940A-7	72	19	41	71
2180A-7	72	19	46	71
2470A-7	72	19	53	71
2880A-7	98	26	61	72
3260A-7	98	26	69	72
<b><math>U_N = 690</math> V, 12-pulse connection</b>				
0530A-7+A004	38	10.0	11	67
0600A-7+A004	38	10.0	13	67
0670A-7+A004	38	10.0	14	67
0750A-7+A004	38	10.0	16	67
0850A-7+A004	38	10.0	18	67
1030A-7+A004	54	14.3	22	69
1170A-7+A004	54	14.3	25	69
1310A-7+A004	54	14.3	27	69
1470A-7+A004	54	14.3	31	69
1660A-7+A004	54	14.3	35	69
1940A-7+A004	82	22	41	71
2180A-7+A004	82	22	46	71
2470A-7+A004	82	22	53	71
2880A-7+A004	98	26	61	72
3260A-7+A004	98	26	69	72
3580A-7+A004	126	33	76	73
4050A-7+A004	126	33	87	74
4840A-7+A004	142	38	104	74
5650A-7+A004	170	45	121	75
6460A-7+A004	186	49	138	75
<b><math>U_N = 690</math> V, 24-pulse connection</b>				
2470A-7+A006	82	22	53	71
3260A-7+A006	98	26	69	72
4840A-7+A006	154	41	103	74
5650A-7+A006	170	45	121	75
6460A-7+A006	186	49	138	75

## Input cable sizes

This table gives typical cable sizes for:

- Marine-type cable with copper conductors such as Nexans MPRXCX® FLEXISHIP® EMC 0.6/1 (1.2) kV
- Industrial-type aluminum and copper cable types. The cable sizing is based on max. 9 cables laid on the cable trays side by side, three ladder type trays one on top of the other, ambient temperature 30 °C (EN 60204-1 and IEC 60364-5-52). A correction factor K = 0.70 is used.

ACS880-07CLC-...	Marine-type cable	Industrial-type cable		
	Copper	Aluminum with XLPE insulation	Aluminum with PVC insulation	Copper with PVC insulation
	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>
<b>U<sub>N</sub> = 690 V, 6-pulse connection</b>				
0390A-7	3 × (3 × 95)	2 × (3 × 120 + 41 Cu)	2 × (3 × 185 + 57 Cu)	2 × (3 × 150 + 70)
0430A-7	3 × (3 × 95)	2 × (3 × 150 + 41 Cu)	2 × (3 × 240 + 72 Cu)	2 × (3 × 150 + 70)
0480A-7	3 × (3 × 95)	2 × (3 × 185 + 57 Cu)	2 × (3 × 240 + 72 Cu)	2 × (3 × 150 + 70)
0530A-7	3 × (3 × 95)	2 × (3 × 185 + 57 Cu)	3 × (3 × 150 + 41 Cu)	2 × (3 × 185 + 95)
0600A-7	4 × (3 × 95)	2 × (3 × 240 + 72 Cu)	3 × (3 × 185 + 57 Cu)	2 × (3 × 240 + 120)
0670A-7	4 × (3 × 95)	3 × (3 × 150 + 41 Cu)	3 × (3 × 240 + 72 Cu)	3 × (3 × 150 + 70)
0750A-7	5 × (3 × 95)	3 × (3 × 185 + 57 Cu)	3 × (3 × 240 + 72 Cu)	3 × (3 × 185 + 95)
0850A-7	5 × (3 × 95)	3 × (3 × 240 + 72 Cu)	4 × (3 × 185 + 57 Cu)	4 × (3 × 150 + 70)
1030A-7	2 × 3 × (3 × 95)	2 × 2 × (3 × 185 + 57 Cu)	2 × 3 × (3 × 150 + 41 Cu)	2 × 2 × (3 × 185 + 95)
1170A-7	2 × 4 × (3 × 95)	2 × 2 × (3 × 240 + 72 Cu)	2 × 3 × (3 × 185 + 57 Cu)	2 × 2 × (3 × 240 + 120)
1310A-7	2 × 4 × (3 × 95)	2 × 3 × (3 × 150 + 41 Cu)	2 × 3 × (3 × 240 + 72 Cu)	2 × 2 × (3 × 240 + 120)
1470A-7	2 × 5 × (3 × 95)	2 × 3 × (3 × 185 + 57 Cu)	2 × 3 × (3 × 240 + 72 Cu)	2 × 3 × (3 × 185 + 95)
1660A-7	2 × 5 × (3 × 95)	2 × 3 × (3 × 240 + 72 Cu)	2 × 4 × (3 × 185 + 57 Cu)	2 × 3 × (3 × 185 + 95)
1940A-7	3 × 4 × (3 × 95)	3 × 4 × (3 × 120 + 41 Cu)	3 × 3 × (3 × 240 + 72 Cu)	3 × 2 × (3 × 240 + 120)
2180A-7	3 × 4 × (3 × 120)	3 × 4 × (3 × 150 + 41 Cu)	3 × 3 × (3 × 240 + 72 Cu)	3 × 3 × (3 × 150 + 70)
2470A-7	3 × 4 × (3 × 120)	3 × 4 × (3 × 150 + 41 Cu)	3 × 4 × (3 × 185 + 57 Cu)	3 × 3 × (3 × 185 + 95)
2880A-7	4 × 3 × (3 × 150)	4 × 3 × (3 × 185 + 57 Cu)	4 × 3 × (3 × 240 + 72 Cu)	4 × 3 × (3 × 150 + 70)
3260A-7	4 × 4 × (3 × 150)	4 × 3 × (3 × 240 + 72 Cu)	–	4 × 3 × (3 × 185 + 95)
<b>U<sub>N</sub> = 690 V, 12-pulse connection</b>				
0530A-7+A004	2 × 2 × (3 × 95)	2 × (3 × 185 + 57 Cu)	2 × 2 × (3 × 95 + 29 Cu)	2 × (3 × 185 + 95)
0600A-7+A004	2 × 2 × (3 × 95)	2 × (3 × 240 + 72 Cu)	2 × 2 × (3 × 120 + 41 Cu)	2 × (3 × 240 + 120)

ACS880-07CLC-...	Marine-type cable	Industrial-type cable		
	Copper	Aluminum with XLPE insulation	Aluminum with PVC insulation	Copper with PVC insulation
	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>
0670A-7+A004	2 × 2 × (3 × 95)	2 × 2 × (3 × 95 + 29 Cu)	2 × 2 × (3 × 150 + 41 Cu)	2 × 2 × (3 × 95 + 50)
0750A-7+A004	2 × 3 × (3 × 95)	2 × 2 × (3 × 120 + 41 Cu)	2 × 2 × (3 × 185 + 57 Cu)	2 × 2 × (3 × 120 + 70)
0850A-7+A004	2 × 3 × (3 × 95)	2 × 2 × (3 × 150 + 41 Cu)	2 × 2 × (3 × 185 + 57 Cu)	2 × 2 × (3 × 150 + 70)
1030A-7+A004	2 × 3 × (3 × 95)	2 × 2 × (3 × 185 + 57 Cu)	2 × 3 × (3 × 150 + 41 Cu)	2 × 2 × (3 × 185 + 95)
1170A-7+A004	2 × 4 × (3 × 95)	2 × 2 × (3 × 240 + 72 Cu)	2 × 3 × (3 × 185 + 57 Cu)	2 × 2 × (3 × 240 + 120)
1310A-7+A004	2 × 4 × (3 × 95)	2 × 3 × (3 × 150 + 41 Cu)	2 × 3 × (3 × 240 + 72 Cu)	2 × 2 × (3 × 240 + 120)
1470A-7+A004	2 × 5 × (3 × 95)	2 × 3 × (3 × 185 + 57 Cu)	2 × 4 × (3 × 185 + 57 Cu)	2 × 3 × (3 × 185 + 95)
1660A-7+A004	2 × 5 × (3 × 95)	2 × 3 × (3 × 240 + 72 Cu)	2 × 4 × (3 × 185 + 57 Cu)	2 × 3 × (3 × 185 + 95)
1940A-7+A004	4 × 3 × (3 × 95)	4 × 2 × (3 × 185 + 57 Cu)	4 × 2 × (3 × 240 + 72 Cu)	4 × 2 × (3 × 150 + 70)
2180A-7+A004	4 × 3 × (3 × 120)	4 × 2 × (3 × 240 + 72 Cu)	4 × 3 × (3 × 185 + 57 Cu)	4 × 2 × (3 × 185 + 95)
2470A-7+A004	4 × 3 × (3 × 120)	4 × 2 × (3 × 240 + 72 Cu)	4 × 3 × (3 × 185 + 57 Cu)	4 × 2 × (3 × 240 + 120)
2880A-7+A004	4 × 3 × (3 × 150)	4 × 3 × (3 × 185 + 57 Cu)	4 × 3 × (3 × 240 + 72 Cu)	4 × 3 × (3 × 150 + 70)
3260A-7+A004	4 × 4 × (3 × 150)	4 × 3 × (3 × 240 + 72 Cu)	–	4 × 3 × (3 × 185 + 95)
3580A-7+A004	6 × 4 × (3 × 95)	6 × 2 × (3 × 240 + 72 Cu)	6 × 3 × (3 × 185 + 57 Cu)	6 × 2 × (3 × 240 + 120)
4050A-7+A004	6 × 4 × (3 × 95)	6 × 3 × (3 × 150 + 41 Cu)	6 × 3 × (3 × 240 + 72 Cu)	6 × 3 × (3 × 150 + 70)
4840A-7+A004	6 × 4 × (3 × 120)	6 × 3 × (3 × 240 + 72 Cu)	6 × 4 × (3 × 185 + 57 Cu)	6 × 3 × (3 × 185 + 95)
5650A-7+A004	8 × 3 × (3 × 150)	8 × 3 × (3 × 185 + 57 Cu)	8 × 3 × (3 × 240 + 72 Cu)	8 × 3 × (3 × 150 + 70)
6460A-7+A004	8 × 4 × (3 × 150)	8 × 3 × (3 × 240 + 72 Cu)	–	8 × 3 × (3 × 185 + 95)
<b>U<sub>N</sub> = 690 V, 24-pulse connection</b>				
2470A-7+A006	4 × 3 × (3 × 120)	4 × 2 × (3 × 240 + 72 Cu)	4 × 3 × (3 × 185 + 57 Cu)	4 × 2 × (3 × 240 + 120)
3260A-7+A006	4 × 4 × (3 × 150)	4 × 3 × (3 × 240 + 72 Cu)	–	4 × 3 × (3 × 185 + 95)
4840A-7+A006	6 × 4 × (3 × 120)	8 × 3 × (3 × 150 + 41 Cu)	8 × 3 × (3 × 185 + 57 Cu)	6 × 3 × (3 × 185 + 95)
5650A-7+A006	8 × 3 × (3 × 150)	8 × 3 × (3 × 185 + 57 Cu)	8 × 3 × (3 × 240 + 72 Cu)	8 × 3 × (3 × 150 + 70)
6460A-7+A006	8 × 4 × (3 × 150)	8 × 3 × (3 × 240 + 72 Cu)	–	8 × 3 × (3 × 185 + 95)

## Output cable sizes

This table gives typical cable sizes for:

- Marine-type cable with copper conductors such as Nexans MPRXCX® FLEXISHIP® EMC 0.6/1 (1.2) kV
- Industrial-type aluminum and copper cable types. The cable sizing is based on max. 9 cables laid on the cable trays side by side, three ladder type trays one on top of the other, ambient temperature 30 °C (EN 60204-1 and IEC 60364-5-52). A correction factor K = 0.70 is used.

ACS880-07CLC-...	Marine-type cable	Industrial-type cable	
	Copper	Aluminum with PVC insulation	Copper with PVC insulation
	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>
<b>U<sub>N</sub> = 690 V, 6-pulse connection</b>			
0390A-7	3 × (3 × 95)	2 × (3 × 185 + 57 Cu)	2 × (3 × 150 + 70)
0430A-7	3 × (3 × 95)	2 × (3 × 240 + 72 Cu)	2 × (3 × 150 + 70)
0480A-7	3 × (3 × 95)	3 × (3 × 150 + 41 Cu)	2 × (3 × 185 + 95)
0530A-7	4 × (3 × 95)	3 × (3 × 185 + 57 Cu)	2 × (3 × 240 + 120)
0600A-7	4 × (3 × 95)	3 × (3 × 240 + 72 Cu)	2 × (3 × 240 + 120)
0670A-7	4 × (3 × 120)	3 × (3 × 240 + 72 Cu)	3 × (3 × 185 + 95)
0750A-7	4 × (3 × 120)	4 × (3 × 185 + 57 Cu)	3 × (3 × 185 + 95)
0850A-7	4 × (3 × 120)	4 × (3 × 240 + 72 Cu)	4 × (3 × 150 + 70)
1030A-7	2 × 4 × (3 × 95)	2 × 3 × (3 × 185 + 57 Cu)	2 × 2 × (3 × 240 + 120)
1170A-7	2 × 4 × (3 × 95)	2 × 3 × (3 × 185 + 57 Cu)	2 × 2 × (3 × 240 + 120)
1310A-7	2 × 4 × (3 × 95)	2 × 4 × (3 × 150 + 41 Cu)	2 × 3 × (3 × 150 + 70)
1470A-7	2 × 4 × (3 × 120)	2 × 4 × (3 × 185 + 57 Cu)	2 × 3 × (3 × 185 + 95)
1660A-7	2 × 4 × (3 × 120)	2 × 4 × (3 × 240 + 72 Cu)	2 × 3 × (3 × 240 + 120)
1940A-7	3 × 4 × (3 × 95)	3 × 3 × (3 × 240 + 72 Cu)	3 × 3 × (3 × 150 + 70)
2180A-7	3 × 4 × (3 × 120)	3 × 4 × (3 × 185 + 57 Cu)	3 × 3 × (3 × 185 + 95)
2470A-7	3 × 4 × (3 × 150)	3 × 4 × (3 × 240 + 72 Cu)	3 × 3 × (3 × 240 + 120)
2880A-7	4 × 4 × (3 × 120)	4 × 4 × (3 × 185 + 57 Cu)	4 × 3 × (3 × 185 + 95)
3260A-7	4 × 4 × (3 × 150)	4 × 4 × (3 × 240 + 72 Cu)	4 × 3 × (3 × 240 + 120)
<b>U<sub>N</sub> = 690 V, 12-pulse connection</b>			
0530A-7+A004	4 × (3 × 95)	3 × (3 × 185 + 57 Cu)	2 × (3 × 240 + 120)
0600A-7+A004	4 × (3 × 95)	3 × (3 × 240 + 72 Cu)	2 × (3 × 240 + 120)
0670A-7+A004	4 × (3 × 120)	3 × (3 × 240 + 72 Cu)	3 × (3 × 185 + 95)
0750A-7+A004	4 × (3 × 120)	4 × (3 × 185 + 57 Cu)	3 × (3 × 185 + 95)
0850A-7+A004	4 × (3 × 120)	4 × (3 × 240 + 72 Cu)	4 × (3 × 150 + 70)
1030A-7+A004	2 × 4 × (3 × 95)	2 × 3 × (3 × 185 + 57 Cu)	2 × 2 × (3 × 240 + 120)
1170A-7+A004	2 × 4 × (3 × 95)	2 × 3 × (3 × 185 + 57 Cu)	2 × 2 × (3 × 240 + 120)
1310A-7+A004	2 × 4 × (3 × 95)	2 × 4 × (3 × 150 + 41 Cu)	2 × 3 × (3 × 150 + 70)
1470A-7+A004	2 × 4 × (3 × 120)	2 × 4 × (3 × 185 + 57 Cu)	2 × 3 × (3 × 185 + 95)
1660A-7+A004	2 × 4 × (3 × 120)	2 × 4 × (3 × 240 + 72 Cu)	2 × 3 × (3 × 240 + 120)
1940A-7+A004	3 × 4 × (3 × 95)	3 × 3 × (3 × 240 + 72 Cu)	3 × 3 × (3 × 150 + 70)

ACS880-07CLC-...	Marine-type cable	Industrial-type cable	
	Copper	Aluminum with PVC insulation	Copper with PVC insulation
	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>
2180A-7+A004	3 × 4 × (3 × 120)	3 × 4 × (3 × 185 + 57 Cu)	3 × 3 × (3 × 185 + 95)
2470A-7+A004	3 × 4 × (3 × 150)	3 × 4 × (3 × 240 + 72 Cu)	3 × 3 × (3 × 240 + 120)
2880A-7+A004	4 × 4 × (3 × 120)	4 × 4 × (3 × 185 + 57 Cu)	4 × 3 × (3 × 185 + 95)
3260A-7+A004	4 × 4 × (3 × 150)	4 × 4 × (3 × 240 + 72 Cu)	4 × 3 × (3 × 240 + 120)
3580A-7+A004	5 × 4 × (3 × 120)	5 × 4 × (3 × 185 + 57 Cu)	5 × 3 × (3 × 185 + 95)
4050A-7+A004	5 × 4 × (3 × 150)	5 × 4 × (3 × 240 + 72 Cu)	5 × 3 × (3 × 240 + 120)
4840A-7+A004	6 × 4 × (3 × 150)	6 × 4 × (3 × 240 + 72 Cu)	6 × 4 × (3 × 150 + 70)
5650A-7+A004	7 × 4 × (3 × 150)	7 × 4 × (3 × 240 + 72 Cu)	7 × 3 × (3 × 240 + 120)
6460A-7+A004	8 × 4 × (3 × 150)	8 × 4 × (3 × 240 + 72 Cu)	8 × 4 × (3 × 185 + 95)
<b>U<sub>N</sub> = 690 V, 24-pulse connection</b>			
2470A-7+A006	3 × 4 × (3 × 150)	3 × 4 × (3 × 240 + 72 Cu)	3 × 3 × (3 × 240 + 120)
3260A-7+A006	4 × 4 × (3 × 150)	4 × 4 × (3 × 240 + 72 Cu)	4 × 3 × (3 × 240 + 120)
4840A-7+A006	6 × 4 × (3 × 150)	6 × 4 × (3 × 240 + 72 Cu)	6 × 4 × (3 × 150 + 70)
5650A-7+A006	7 × 4 × (3 × 150)	7 × 4 × (3 × 240 + 72 Cu)	7 × 3 × (3 × 240 + 120)
6460A-7+A006	8 × 4 × (3 × 150)	8 × 4 × (3 × 240 + 72 Cu)	8 × 4 × (3 × 185 + 95)

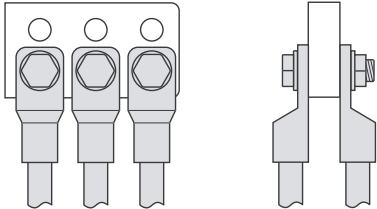
## Terminal and cable entry data for the power cables

The locations and sizes of the cable entries are shown in the dimension drawings delivered with the drive, and the dimension drawing examples in this manual.

Busbar terminal material: Tin-plated copper.

### ■ Terminal data for the motor cables

The maximum number of motor cables depends on the cable size, cable material, number of inverter modules and on the inverter unit cubicle width. Before you select motor cable sizes, check the inverter unit construction from the project-specific dimension drawings and use the tables below to determine the connection capability.

Maximum number of 3-phase motor cables (copper) for each inverter module, n×R8i with cable exit from bottom					
Cable cross section (mm <sup>2</sup> )	Copper compression cable lugs (DIN 46235)				Connection method
	1×R8i (300 mm cubicle)	1×R8i (400 mm cubicle)	2×R8i (500 mm cubicle)	3×R8i (700 mm cubicle)	
50	4 (6*)	6	5 (6*)	5 (6*)	
70	4 (6*)	6	5 (6*)	5 (6*)	
95	4 (6*)	6	5 (6*)	5 (6*)	

**Maximum number of 3-phase motor cables (copper) for each inverter module, n×R8i with cable exit from bottom**

Cable cross section (mm <sup>2</sup> )	Copper compression cable lugs (DIN 46235)				Connection method
	1×R8i (300 mm cubicle)	1×R8i (400 mm cubicle)	2×R8i (500 mm cubicle)	3×R8i (700 mm cubicle)	
120	4	4	4	4	
150	4	4	4	4	
185	4	4	4	4	
240	4	4	4	4	
300	-	-	-	-	

\* Requires additional engineering. Standard cable entry plate not suitable.

**Maximum number of 3-phase motor cables (aluminum) for each inverter module, n×R8i with cable exit from bottom**

Cable cross section (mm <sup>2</sup> )	Aluminum compression cable lugs (DIN 46329)				Connection method
	1×R8i (300 mm cubicle)	1×R8i (400 mm cubicle)	2×R8i (500 mm cubicle)	3×R8i (700 mm cubicle)	
50	4 (6*)	6	5 (6*)	5 (6*)	
70	4 (6*)	6	5 (6*)	5 (6*)	
95	4 (6*)	6	5 (6*)	5 (6*)	
120	4	6	5	5	
150	4	6	5	5	
185	4	6	5	5	
240	2	2	2	2	
300	2*	2*	2*	2*	

\* Requires additional engineering. Standard cable entry plate not suitable.



Short-circuit current protection (UL 508A, CSA C22.2 No. 14-13)	The drive is suitable for use on a circuit capable of delivering not more than 100,000 rms symmetrical amperes at 600 V maximum when the input cable is protected with class T fuses.
Fundamental power factor ( $\cos \phi_1$ )	0.97 ... 0.98 (at nominal load)
Transformer specification for 12-pulse supply (IEC 60076-1:2011)	<p><u>Connection:</u> Dy 11 d0 or Dyn 11 d0</p> <p><u>Phase shift between secondaries:</u> 30° electrical</p> <p><u>Voltage difference between secondaries:</u> &lt; 0.5%</p> <p><u>Short-circuit impedance of secondaries:</u> &gt; 5%</p> <p><u>Short-circuit impedance difference between secondaries:</u> ≤ 10% of the percentage impedance</p> <p>To avoid a potentially destructive DC voltage level in an earth fault situation, grounding of the secondaries is not allowed. Static shielding is recommended.</p>

## Motor connection data

Motor types	Asynchronous AC induction motors, permanent magnet synchronous motors and AC induction servomotors, ABB synchronous reluctance (SynRM) motors
Voltage ( $U_2$ )	0 ... $U_1$ , 3-phase symmetrical, $U_{max}$ at the field weakening point
Frequency ( $f_2$ )	0...500 Hz <ul style="list-style-type: none"> <li>For higher operational output frequencies, please contact your local ABB representative.</li> <li>Operation outside the range of 12...150 Hz requires derating. See the derating information.</li> </ul>
Current	See the rating tables.
Switching frequency	3 kHz (typical). The switching frequency can vary per frame and voltage. For exact values, contact your local ABB representative.
Maximum recommended motor cable length	<p>500 m (1640 ft).</p> <p><b>Note:</b> Longer cables cause a motor voltage decrease which limits the available motor power. The decrease depends on the motor cable length and characteristics. Contact ABB for more information.</p> <p><b>Note:</b> With motor cables longer than 150 m (492 ft) the EMC Directive requirements may not be fulfilled.</p>

## External auxiliary voltage connections

### ■ Control voltage supply

ACS880-07CLC-...	Control voltage supply (230/115 V)					Terminal torque (Q20, ABB OT40) N·m (lbf·in)
	Power requirement approx.	Minimum short-circuit current		Cable size recommendation		
		230 V	115 V	230 V	115 V	
VA	A	A	mm <sup>2</sup>	mm <sup>2</sup>		
0390A-7 0430A-7 0480A-7 0530A-7 (+A004) 0600A-7 (+A004) 0670A-7 (+A004) 0750A-7 (+A004) 0850A-7 (+A004)	1330	125	190	3 × 2.5 / 2.5	3 × 6 / 6	0.8 (7.1)

ACS880-07CLC-...	Control voltage supply (230/115 V)					
	Power re- quirement approx.	Minimum short-circuit current		Cable size recommenda- tion		Terminal torque (Q20, ABB OT40)
		230 V	115 V	230 V	115 V	
	VA	A	A	mm <sup>2</sup>	mm <sup>2</sup>	N·m (lbf·in)
1030A-7 (+A004) 1170A-7 (+A004) 1310A-7 (+A004) 1470A-7 (+A004) 1660A-7 (+A004)	1380	125	190	3 × 2.5 / 2.5	3 × 6 / 6	0.8 (7.1)
1940A-7 (+A004) 2180A-7 (+A004) 2470A-7 (+A004) (+A006)	1440	125	190	3 × 2.5 / 2.5	3 × 6 / 6	0.8 (7.1)
2880A-7 (+A004) 3260A-7 (+A004) (+A006)	1490	125	190	3 × 2.5 / 2.5	3 × 6 / 6	0.8 (7.1)
3580A-7+A004 4050A-7+A004	1550	125	240	3 × 2.5 / 2.5	3 × 6 / 6	0.8 (7.1)
4840A-7+A004 4840A-7+A006	1600	125	240	3 × 2.5 / 2.5	3 × 6 / 6	0.8 (7.1)
5650A-7+A004 5650A-7+A006	1660	125	240	3 × 2.5 / 2.5	3 × 6 / 6	0.8 (7.1)
6460A-7+A004 6460A-7+A006	1710	125	240	3 × 2.5 / 2.5	3 × 6 / 6	0.8 (7.1)

## ■ Cooling fan supply

ACS880-07CLC-...	Cooling fan supply (230/115 V)					
	Power re- quirement approx.	Minimum short-circuit current		Cable size recommenda- tion		Terminal torque (Q22, ABB OT40)
		230 V	115 V	230 V	115 V	
	VA	A	A	mm <sup>2</sup>	mm <sup>2</sup>	N·m (lbf·in)
0390A-7 0430A-7 0480A-7 0530A-7 (+A004) 0600A-7 (+A004) 0670A-7 (+A004) 0750A-7 (+A004) 0850A-7 (+A004)	810	125	125	3 × 2.5 / 2.5	3 × 2.5 / 2.5	0.8 (7.1)
1030A-7 (+A004) 1170A-7 (+A004) 1310A-7 (+A004) 1470A-7 (+A004) 1660A-7 (+A004)	1110	125	155	3 × 2.5 / 2.5	3 × 2.5 / 2.5	0.8 (7.1)
1940A-7 2180A-7 2470A-7	1410	125	190	3 × 2.5 / 2.5	3 × 6 / 6	0.8 (7.1)
1940A-7+A004 2180A-7+A004 2470A-7+A004 2470A-7+A006	1410	125	240	3 × 2.5 / 2.5	3 × 6 / 6	0.8 (7.1)
2880A-7 (+A004) 3260A-7 (+A004) (+A006)	1720	125	240	3 × 2.5 / 2.5	3 × 6 / 6	0.8 (7.1)

ACS880-07CLC-...	Cooling fan supply (230/115 V)					
	Power re- quirement approx.	Minimum short-circuit current		Cable size recommenda- tion		Terminal torque (Q22, ABB OT40)
		230 V	115 V	230 V	115 V	
	VA	A	A	mm <sup>2</sup>	mm <sup>2</sup>	N·m (lbf·in)
3580A-7+A004 4050A-7+A004	2380	190	385	3 × 6 / 6	3 × 10 / 10	0.8 (7.1)
4840A-7+A004 4840A-7+A006	2680	190	385	3 × 6 / 6	3 × 10 / 10	0.8 (7.1)
5650A-7+A004 5650A-7+A006	2980	240	385	3 × 6 / 6	3 × 10 / 10	0.8 (7.1)
6460A-7+A004 6460A-7+A006	3290	240	385	3 × 6 / 6	3 × 10 / 10	0.8 (7.1)

### ■ Charging circuit supply

ACS880-07CLC-...	Charging circuit supply (525...690 V)		
	Minimum short-circuit current	Cable size recommenda- tion	Terminal torque (Q3, ABB OS40)
	A	mm <sup>2</sup>	N·m (lbf·in)
0390A-7 0430A-7 0480A-7 0530A-7(+A004) 0600A-7(+A004) 0670A-7(+A004) 0750A-7(+A004) 0850A-7(+A004) 1030A-7(+A004) 1170A-7(+A004) 1310A-7(+A004) 1470A-7(+A004) 1660A-7(+A004) 1940A-7 2180A-7 2470A-7	90	3 × 2.5 / 2.5	2.0 (18)
1940A-7+A004 2180A-7+A004 2470A-7+A004 2470A-7+A006 2880A-7(+A004) 3260A-7(+A004)(+A006) 3580A-7+A004 4050A-7+A004 4840A-7+A004	140	3 × 6 / 6	2.0 (18)
4840A-7+A006 5650A-7+A004 5650A-7+A006 6460A-7+A004 6460A-6+A006	240	3 × 10 / 10	2.0 (18)

## ■ Lighting and heating supply

ACS880-07CLC-...	Lighting and heating supply (230/115 V)					Terminal torque (Q95, ABB OT40) N·m (lbf·in)
	Power requirement approx.	Minimum short-circuit current		Cable size recommendation		
		230 V	115 V	230 V	115 V	
VA	A	A	mm <sup>2</sup>	mm <sup>2</sup>	N·m (lbf·in)	
All types	990	60	125	3 × 1.5 / 1.5	3 × 2.5 / 2.5	0.8 (7.1)

## Relay contact data for control of external main contactor/breaker

### ■ General

The external main contactor or breaker is controlled by the drive through relay K3. The relay has one normally-open (NO) and one normally-closed (NC) contact.

Emergency stop options add a relay (K640) to the drive. To trip the main breaker upon an emergency stop, one of the output switchover contacts of the relay must be wired to the undervoltage coil.

The contacts of both relays are wired to a terminal block in the drive cubicle; see the drive-specific circuit diagrams for details. The external voltage switched by the contacts is to be connected to the same terminal block.

### ■ K3 contact data

- Rated operational AC current ( $I_e$ ) (IEC/EN 60947-5-1 AC 15):
  - 24...127 V, 50/60 Hz: 6 A
  - 220...240 V, 50/60 Hz: 4 A
  - 400...440 V, 50/60 Hz: 3 A
  - 500 V, 50/60 Hz: 2 A
  - 690 V, 50/60 Hz: 2 A
- Rated making/breaking capacity (IEC/EN 60947-5-1 AC 15):  $10 \times I_e$  AC
- Rated operational DC current ( $I_e$ ) (IEC/EN 60947-5-1 DC 13):
  - 24 V DC: 6 A / 144 W
  - 48 V DC: 2.8 A / 134 W
  - 72 V DC: 1 A / 72 W
  - 110 V DC: 0.55 A / 60 W
  - 125 V DC: 0.55 A / 69 W
  - 220 V DC: 0.27 A / 60 W
  - 250 V DC: 0.27 A / 68 W
  - 400 V DC: 0.15 A / 60 W
  - 500 V DC: 0.13 A / 65 W
  - 600 V DC: 0.1 A / 60 W
- Rated short-time withstand current: 100 A for 1.0 s, 140 A for 0.1 s
- Minimum switching capacity: 12 V / 3 mA

## ■ K640 contact data

- Switching power: 3 VA or 3 W minimum, 2000 VA or 200 W maximum
- Switching capacity, AC (IEC/EN 60947-5-1 AC 15):
  - NC: 230 V, 1 A
  - NO: 230 V, 3 A
- Switching capacity, DC (IEC/EN 60947-5-1 DC 13):
  - NC / NO: 24 V, 2 A
- Switching capacity (UL 508): R300

## Efficiency

97.8 ... 97.9% at nominal power level depending on drive type

The efficiency is not calculated according to the ecodesign standard IEC 61800-9-2.

## Energy efficiency data (ecodesign)

Energy efficiency data according to IEC-61800-9-2 is available from

## Optical components

The specifications of the optic cable are as follows:

- Storage temperature: -55 ... +85 °C (-67 ... +185 °F)
- Installation temperature: -20 ... +70 °C (-4 ... +158 °F)
- Maximum short-term tensile force: 50 N (11.2 lbf)
- Minimum short-term bend radius: 25 mm (1.0 in)
- Minimum long-term bend radius: 35 mm (1.4 in)
- Maximum long-term tensile load: 1 N (3.6 ozf)
- Flexing: Max. 1000 cycles

ABB drive products in general utilize 5 and 10 MBd (megabaud) optical components from Avago Technologies' Versatile Link range. Note that the optical component type is not directly related to the actual communication speed.

**Note:** The optical components (transmitter and receiver) on a fiber optic link must be of the same type.

Plastic optical fiber (POF) cables can be used with both 5 MBd and 10 MBd optical components. 10 MBd components also enable the use of Hard Clad Silica (HCS®) cables, which allow longer connection distances thanks to their lower attenuation. HCS® cables cannot be used with 5 MBd optical components.

The maximum lengths of fiber optic links for POF and HCS® cables are 20 and 200 meters (65.6 ft and 656 ft) respectively.

## Materials

### ■ Drive

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

### ■ Packaging of drive

- Plywood<sup>1)</sup>
- Wood
- PET (strapping)
- PE (VCI foil)
- Metal (fixing clamps, screws)
- VCI emitter capsules
- Clay desiccant.

<sup>1)</sup> Seaworthy package only

### ■ Packaging of options

- Cardboard
- Kraft paper
- PP (straps)
- PE (foil, 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 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 large electrolytic capacitors need selective treatment according to IEC 62635 guidelines. To aid recycling, plastic parts are marked with an appropriate identification code.

Contact your local ABB distributor for further information on environmental aspects and recycling instructions for professional recyclers. End of life treatment must follow international and local regulations. See [ACS880 cabinet-installed drives and multidrive modules recycling instructions and environmental information \(3AXD50000153909 \[English\]\)](#).

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