

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Frequency Converter

with type designation(s)
ACS 880-104LC-xxxx-x

Issued to

**ABB Oy, Drives
Helsinki, Finland**

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2017-09-29**

This Certificate is valid until **2022-09-28**.

DNV GL local station: **Helsinki**

for **DNV GL**

Approval Engineer: **Nicolay Horn**

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**Andreas Kristoffersen
Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Product description

The ACS880-104LC-xxxx-x is a drive module for controlling asynchronous AC induction motors, permanent magnet motors, AC induction servomotors and ABB synchronous reluctance motors (SynRM motors)

Voltage:	690V
Voltage tolerance:	Steady state $\pm 10\%$, transient state -15% to +20% of nominal AC voltage
Frequency:	50/60 Hz
Frequency tolerance:	Steady state $\pm 5\%$, transient state $\pm 10\%$
Ambient temperature:	0-45°C, derating 0.5% / °C for ambient temperatures 45-55 °C
Humidity:	0-95%, no condensation
Vibration class:	A
EMC class:	IEC 61800-3 (see application limitation)
Ingress protection:	IP00 (See application / limitation)

RATING (at 45°C)									
Drive type ACS880-104LC-	Frame size	Input rating	Max. current	Output ratings					
				No overload use		Light-overload use		Heavy-duty use	
		I_{1N}	I_{max}	I_N	P_N	I_{Ld}	P_{Ld}	I_{Hd}	P_{Hd}
		A	A	A	kW	A	kW	A	kW
$U_N = 690\text{ V}$ (Range 525...690 V)									
0390A-7	R8i	439	590	390	355	374	355	292	250
0430A-7	R8i	484	650	430	400	413	355	322	250
0480A-7	R8i	540	720	480	450	461	400	359	315
0530A-7	R8i	596	800	530	500	509	450	396	355
0600A-7	R8i	675	900	600	560	576	560	449	400
0670A-7	R8i	754	1010	670	630	643	630	501	450
0750A-7	R8i	844	1130	750	710	720	710	561	450
0850A-7	R8i	956	1280	850	800	816	800	636	560
1030A-7	2×R8i	1159	1550	1030	1000	989	900	770	710
1170A-7	2×R8i	1316	1760	1170	1100	1123	1100	875	800
1310A-7	2×R8i	1474	1970	1310	1200	1258	1200	980	900
1470A-7	2×R8i	1654	2210	1470	1400	1411	1200	1100	1000
1660A-7	2×R8i	1868	2490	1660	1600	1594	1400	1242	1200
1940A-7	3×R8i	2183	2910	1940	1800	1862	1800	1451	1400
2180A-7	3×R8i	2453	3270	2180	2000	2093	2000	1631	1400
2470A-7	3×R8i	2779	3710	2470	2300	2371	2300	1848	1800
2880A-7	4×R8i	3240	4320	2880	2700	2765	2700	2154	2000
3260A-7	4×R8i	3668	4890	3260	3000	3130	3000	2438	2300
3580A-7	5×R8i	4028	5370	3580	3400	3437	3200	2678	2600
4050A-7	5×R8i	4556	6080	4050	3800	3888	3800	3029	2800
4840A-7	6×R8i	5445	7260	4840	4400	4646	4400	3620	3500
5650A-7	7×R8i	6356	8480	5650	5200	5424	5200	4226	4000
6460A-7	8×R8i	7268	9690	6460	6000	6202	6000	4832	4700

U_N	Supply voltage range
I_{1N}	Nominal input current (rms)
I_{max}	Maximum output current. Available for 10 seconds at start, otherwise as long as allowed by drive temperature
I_N	Continuous rms output current. No overload capability
P_N	Typical motor 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 for light-overload use
I_{Hd}	Continuous rms output current allowing 50% overload for 1 minute every 5 minutes
P_{Hd}	Typical motor power for heavy-duty use

Application/Limitation

Electro Magnetic Compatibility:

Converter can be installed in "special distribution zone" and "general power distribution zone", in accordance with IEC 60533 provided measures / precautions are taken to attenuate these effects on the distribution system.

Ingress protection requirements:

To be installed in an enclosure with an IP degree in accordance with DNV GL Rules w.r.t. location..

Product certification:

Frequency converters larger than 100kW serving important or essential equipment are subjected for additional case by case based product certification. Documentation to be submitted for product certification shall be according DNVGL ship rules Pt.4 Ch.8 or DNVGL offshore standard D201, including reference to this type approval certificate and confirmation that the correct power ratings are used.

Type Approval documentation

Tests carried out

General type tests in accordance with IEC 61800-1 and 61800-5-1 including Full Current Test and Heat run test.

Environmental tests including Power Supply Variation, Power Supply Failure, Dielectric, EMC (immunity and emission), Vibration, Low temperature and Damp heat.

Marking of product

ABB Oy – Type designation – Output – Input – IP degree

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the periodical assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routines (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment to be performed at 2, 3.5 year and at renewal.

END OF CERTIFICATE