

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Frequency Converter

with type designation(s)
ACS 880LC

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 :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2019-11-20**

for **DNV GL**

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

DNV GL local station: **Helsinki FIS**

Approval Engineer: **Nicolay Horn**

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Trond Sjøvåg
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.



Job Id: **262.1-025905-3**
 Certificate No: **TAE0000298**
 Revision No: **2**

Product description

The ACS880LC drive modules (-x04LC) and drive cabinets (-x7/-x07-xx07LC) for controlling asynchronous AC induction motors, synchronous motors with external excitation, 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 (See application / limitation)
 EMC class: IEC 61800-3 C4 (see application limitation)
 Ingress protection: IP00. For cabinets ending xx7: IP42, optional IP54 (See application / limitation)

Category	Voltage UN (V)	Rated Current I _{IN} (A)	Power PN (kW)	Frame size
ACS880-07CLC	690	390-6460	355-6000	1*D8D+1*R8i ... 8*D8D+8*R8i
ACS880-104LC and ACS880-107LC	690	390-6460	355-6000	1*R8i ... 8*R8i
ACS880-304LC + A019 and ACS880-307LC + A019	690	820-5940	932-6784	1* D8D ...8*D8D
ACS880-1007LC	400/690	NA	70-195	NA
ACS880-607LC and ACS880-607C	525-690		400-2400	1-6*NBRW-669
ACS880-17LC	690	390-6260	355-6000	1*R8i+1*R8i...8*R8i+8*R8i
ACS880-37LC	690	390-6260	355-6000	1*R8i+1*R8i...8*R8i+8*R8i
ACS880-204LC and ACS880-207LC	690	360-5810	426-6874	1*R8i...8*R8i
ACS880-1604LC and ACS880-1607LC	690	400-1800	351-1581	1*R8i...2*R8i

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.

Vibration

With using ABB accessory kit it is possible to build up the compatible product.

Ingress protection requirements:

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

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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

Technical info:

ABB Drives – ACS880-07CLC, presentation from ABB.
Hardware manual – ACS880-104LC inverter modules.

Test reports:

ABB test reports nos. 3AXD10000575482, dated 2017-05-19, 3AXD10000730962, dated 2018-06-14, 3AXD10000733140, dated 2018-08-10, 3AXD10000737173, dated 2018-05-29, 3AXD10000746500, dated 2018-06-14, 3AXD10000808563, dated 2019-06-05, 3AXD10000894763, dated 2019-04-26, 3AXD10000902442, dated 2019-05-22, 3AXD10000902442, dated 2019-05-22, 3AXD10000908840, dated 2019-05-07, 3AXD10000930972 dated 2019-06-12, S880-207LC-1180A-7 dated 2019-06-14, 3AXD10000687698, dated 2017-05-19, 3AXD10000698272 dated 2017-09-15, 3AXD10000653689 dated 2018-01-04, 3AXD10000649643 dated 2017-12-14, 3AXD10000659405 dated 2017-12-18, 3AXD10000648620 dated 2017-09-19, 3AXD10000659402 dated 2017-12-18, 3AXD10000624266 dated 2017-12-12, 3AXD10000599323 dated 2017-03-17, 3AXD10000661945 dated 2017-12-11, 3AXD10000625359 rev. 2 dated 2017-08-08, 3AXD10000592161 rev. A dated 2017-02-21, 3AXD10000552845 & 3AXD10000552846 rev. A dated 2016-10-13, 3AXD10000574977 dated 2017-02-17, 3AXD1000060270 rev. A dated 2017-03-30, 3AXD10000594591 rev. A dated 2017-03-01 and 3AXD10000686145 dated 2018-01-25. SGS test reports nos. 289705-1-1 dated 2017-10-06, 289705-2-3 dated 2017-12-80, 289705-2-4 dated 2018-05-16, 292790-1-3 dated 2017-04-18, 284748-3-1 & 284748-3-2 dated 2016-09-30 and 2016-10-04. INNVENTIA test report no. 280 680 B dated 2017-11-09. VVT Test report nos. VTT-S-02259-18 dated 2018-05-28, VTT-S-06943-17 dated 2018-01-24 VTT-S-06945-17 dated 2018-01-19, VTT-S-05213-16 dated 2017-01-27 & VTT-S-04517-17 dated 2017-08-28. Eurofins report no. EUFI29-1903-T2

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 and 3.5 year and at renewal.

END OF CERTIFICATE