

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Frequency Converter

with type designation(s)

ACS880-104-xxxx-x, ACS880-204-xxxx-x, ACS880-304-xxxx-x, ACS880-604-xxxx-x, ACS880-1604-xxxx-x, ACS880-04XT-xxxx-x, ACS880-04-xxxx-x, ACS880-14/34-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.

This Certificate is valid until **2021-10-30**.

Issued at **Høvik** on **2017-10-29**

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.

Job Id: **262.1-021795-3**
 Certificate No: **TAE00001FX**
 Revision No: **1**

Name and place of manufacturer

ABB Oy Drives Helsinki, Finland	ABB Beijing Drive Systems Co.; Ltd Beijing, China
ABB AS Jüri, Harjumaa, Estonia	

Product description

The ACS880 with the type designations ACS880-104-xxxx-x, ACS880-204-xxxx-x, ACS880-304-xxxx-x, ACS880-604-xxxx-x, ACS880-1604-xxxx-x, ACS880-04XT-xxxx-x, ACS880-04-xxxx-x and ACS880-14/34-xxxx-x are drive modules and drive module packages for controlling asynchronous AC induction motors, permanent magnet motors, AC induction servomotors and ABB synchronous reluctance motors (SynRM motors).

Type code designation +C132 for marine applications.

Voltage:	380V – 690V
Voltage tolerance:	Steady state ±10%, transient state ±20%
Frequency:	50/60 Hz
Frequency tolerance:	Steady state ±5%, transient state ±10%
Ambient temperature:	0-45°C
Humidity:	0-95%, no condensation
Vibration class:	A
EMC class:	IEC 61800-3 (see application limitation)

1	Category	Voltage UN (V)	Power PN (+45°C) (kW)	Power SN (+45°C) (kVA)	Frame sizes
1a	Modules: Supply modules: ACS880-204 (ISU) ACS880-304 (DSU) Inverter modules: ACS880-104 (INU) Brake modules: ACS880-NBRA658, 659, 669 ACS880-604 DC/DC -converter modules: ACS880-1604	380-690 380-690 380-690 380-690 380-690 380-690 380-690	- - 5-5320 67-678 475- 6175 290-2721	143-3495 430-5173 - - - -	R6i+ALCL-05-5 ... 6xR8i+3xBLCL-25-7 2xD7T, D8T ... 6xD8T R5i ... 10xR8i NBRA658 ... 6xNBRA669 R8i ... 5R8i R8i ... 5xR8i (DC output)
1b	High power single drive module packages: ACS880-04XT ACS880-04 ACS880-14/34	380-690 380-690 380-690	599-1045 599-2090 238-1330	- - -	2xR10 ... 2xR11 2xD7T, D8T ... 4xD8T + 2xR8i ... 4xR8i R8i ... 4R8i + BLCL-XX-X + R8i ...4xR8i

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Application/Limitation

Electro Magnetic Compatibility:

- EMC filter option E202 (not for 690V) to be used in TN-system for 1st environment, restricted distribution, C2.
- EMC filter option E210 for ACS880-04XT, other types: EMC filter as standard (Note: For category 3 no optional equipment is needed, but the drive must be installed according to the instructions given in the manuals) for 2nd environment, C3, grounded/ungrounded network (TN/IT-systems).

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

Pollution degree:

To be installed in an enclosure with an IP degree in accordance with DNV Rules w.r.t. location. IP 20 and 21 versions are limited to be used in pollution protected rooms (maximum pollution degree II).

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 marine options and power ratings are used.

Type Approval documentation

As stated in approval letters:

MCANO381/AKRIS/262.1-021795-J-8
MCANO381/AKRIS/262.1-021795-J-16
MCANO381/AKRIS/262.1-021795-J-19

Tests carried out

According to DNVGL-CP-0395

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 are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (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.

Assessment to be performed at 2, 3.5 year and at renewal.

END OF CERTIFICATE