

# 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 **2016-10-31**

DNV GL local station: **Helsinki**

for **DNV GL**

Approval Engineer: **Marta Alonso Pontes**

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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 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 $\pm 10\%$ , transient state $\pm 20\%$ |
| Frequency:           | 50/60 Hz                                             |
| Frequency tolerance: | Steady state $\pm 5\%$ , transient state $\pm 10\%$  |
| Ambient temperature: | 0-45°C                                               |
| Humidity:            | 0-95%, no condensation                               |
| Vibration class:     | A                                                    |
| EMC class:           | IEC 61800-3 (see application limitation)             |

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

## Application/Limitation

### Electro Magnetic Compatibility:

- EMC filter option E202 (not for 690V) to be used in TN-system for 1<sup>st</sup> 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 2<sup>nd</sup> 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

### 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 least every second year.

END OF CERTIFICATE