



Marine &amp; Offshore

Certificate number: 48642/A3 BV

File number: ACE6/1/2

Product code: 2592I

This certificate is not valid when presented without the full attached schedule  
composed of 7 sections

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## TYPE APPROVAL CERTIFICATE

This certificate is issued to

**ABB Oy Drives**

Helsinki - FINLAND

for the type of product

### FREQUENCY CONVERTERS (Power 50kW and over)

ACS880-07CLC Compact Drive; ACS880-104LC; ACS880-107LC;  
ACS880-304LC+A019; ACS880-307LC+A019; ACS880-604LC; ACS880-607LC;  
ACS880-1007LC; ACS880-17C; ACS880-37C; ACS880-204LC; ACS880-207LC;  
ACS880-1604LC; ACS880-1607LC

#### Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

IEC 61800-5-1 (2007)

IEC 60068-2-1 (2007)

IEC 60533 (2015)

EC Code: 31

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

**This certificate will expire on: 11 Dec 2022**

**For Bureau Veritas Marine & Offshore,**

At BV TURKU (ABO), on 13 Jan 2020,

Roger Robertsson



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarp.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=cmj2ofmoxo>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

The ACS880LC is liquid cooled frequency converter family. It includes complete drives, its modules and cabinets.

#### Model – ACS880LC

Typical input voltage supply 742/849/976 VDC.

Ratings at 45 degree.

Category	Voltage U <sub>N</sub> (V)	Rated Current I <sub>N</sub> (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
ACS880-604LC and ACS880-607LC	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

### 2. DOCUMENTS AND DRAWINGS:

- Main circuit diagram Ref: 3AXD50000045610 Rev A, dated 28/04/2017.
- Hardware Manual ACS880-07CLC drives Ref: 3AXD50000131457 Rev A, dated 09/03/2018.
- Main circuit diagram Ref: ACS880 CLC Rev.0, dated 26/10/2018.

#### **For modification A3 version:**

- ACS880-17LC drives Hardware manual, No. 3AXD50000250295 Rev. A, dated 30-06-2019.
- ACS880-37LC drives Hardware manual, No. 3AXD50000251407 Rev. A, dated 30-06-2019.
- ACS880-204LC IGBT supply modules Hardware manual, No. 3AXD50000284436 Rev. A, dated 30-06-2019.
- ACS880-207LC IGBT supply units Hardware manual, No. 3AXD50000174782 Rev. A, dated 30-06-2019.
- ACS880-1604LC DC/DC converter modules Hardware manual, No. 3AXD50000371631 Rev. A, dated 28-06-2019.
- ACS880-1607LC DC/DC converter modules Hardware manual, No. 3AXD50000431342 Rev. A, dated 28-06-2019.
- ACS880 17LC circuit diagrams, dated 31-05-2019.
- ACS880 37LC circuit diagrams, dated 31-05-2019.
- ACS880 207LC circuit diagrams, dated 31-05-2019.
- ACS880-R8iLC Main Assembly drawing, No. 3AXD50000044181, dated 26-09-2019.
- ACS880-R8iLC Dimension drawing, No. 3AXD50000048361, dated 05-06-2019.
- ACS880-R8iLC circuit diagrams, No. 3AXD10000461740.
- Assembly Drawing DDC IXR8i W800 ACS880LC, No. 3AXD50000330188, dated 08-08-2019.

### 3. TEST REPORTS:

- ACS880-104LC-0850A-7, ref: 3AXD10000552845, dated 20 Oct 2016.
- ACS880-104LC-0850A-7, ref: 3AXD10000552846, dated 20 Oct 2016.
- ACS880-104LC-0850A-7, ref: 3AXD10000574977 Rev A, dated 10 Feb 2017.
- ACS880-104LC-0850A-7, ref: 3AXD10000602470 Rev A, dated 30 Mar 2017.
- ACS880-07CLC-1660A-7, ref: 284748-3-1, dated 30 Sept 2016.
- ACS880-07CLC-1660A-7, ref: 284748-3-2, dated 04 oct 2016.
- ACS880-104LC-0850A-7, ref: 285729-1, dated 04 Jul 2017.
- ACS880-104LC-0850A-7 R8i, ref: 3AXD10000592161, dated 21 Feb 2017.
- ACS880-104LC-0850A-7 R8i, ref: 3AXD10000608989, dated 01 Jun 2017.
- ACS880-104LC R8i, ref VTT-S-05213-16, dated 27 Jan 2017.
- Type Test Reports ACS880-07CLC as communicated to BV dated 04/10/2018.

**For modification A3 version:****SGS:**

- EMC Test Report No. 289705-2-3, dated 08-12-2017.
- EMC Test Report No. 289705-1-1, dated 06-10-2017.
- EMC Test Report No. 289705-2-4, dated 16-05-2018.
- EMC Test Report No. 292790-1-3, dated 18-04-2018.
- EMC Test Report No. 297705-1-2, dated 18-09-2019.

**VTT:**

- Sine VibrationTest Report, No. VTT-S-06945-17, dated 19-01-2018.
- Sine VibrationTest Report, No. VTT-S-06943-17, dated 19-01-2018.
- Sine VibrationTest Report, No. VTT-S-02259-18, dated 28-05-2018.

**ABB:**

- Type test report ACS880-17/37LC, No. 3AXD10000730962, dated 18-06-2018.
- Type test report ACS880-17/37LC, No. 3AXD10000733140, dated 10-08-2018.
- Type test report ACS880-17/37LC, No. 3AXD10000746500, dated 15-06-2018.
- Type test report ACS880-17/37LC, No. 3AXD10000733140, dated 10-08-2018.
- Type test report ACS880-207LC, No. 3AXD10000690789, dated 14-06-2019.
- Type test report ACS880-207LC, No. 3AXD10000808563, dated 06-06-2019.
- Environmental Type test report ACS880-1607LC, No. 3AXD10000737173, dated 29-05-2018.
- Type test report ACS880-17/37LC and ACS880-207LC, No. 3AXD10000894763, dated 26-04-2019.
- Type test report ACS880-1607LC, No. 3AXD10000908840, dated 07-05-2019.
- Environmental Type test report ACS880-204LC, No. 3AXD10000930972, dated 12-06-2019.
- ACS880-1607LC-0900A-7 type test report Rev. C, dated 04-12-2019.
- ACS880-207LC-1500A-7 type test report Rev. B02, dated 11-06-2019.

**eurofins:**

- Sine VibrationTest Report, No. EUFI29-19001903-T2, dated 16-05-2019.

**4. APPLICATION / LIMITATION:**

- 4.1 - BV Rules for the Classification of Steel Ships.
- 4.2 - Approval also valid for ships to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
- 4.3 - BUREAU VERITAS Environmental Category, **EC Code: 31.**
- 4.4 - In accordance with the manufacturer instructions.
- 4.5 - ACS880 liquid cooled drive module is to be mounted in a cabinet.
- 4.6 - The equipment should be installed in "special distribution zone", according to the dispositions stipulated in the IEC 60533.

**5. PRODUCTION SURVEY REQUIREMENTS:**

- 5.1 - The above product are to be supplied by **ABB Drives Helsinki- Finland** in compliance with the type and the requirements described in this certificate.
- 5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.
- 5.3 - BV product certificate is required.
- 5.4 - The **ABB Drives Helsinki- Finland** has declared to Bureau Veritas the following production site:

**ABB Oy Drives FIDRI  
Hiomotie 13 FI-00380  
PO Box 184 FI-00381  
Helsinki Finland.**

**6. MARKING OF PRODUCT:**

- 6.1 - Maker's name or trade mark,
- 6.2 - Serial number of the units,
- 6.3 - Equipment type number or model identification under which it was type-tested,
- 6.4 - @ or \ conformity marking, as relevant.

**7. OTHERS:**

- 7.1 - It is **ABB Drives Helsinki- Finland**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
- 7.2 - This certificate supersedes the Type Approval Certificate No. 48642/A2 BV issued on 22 Mar 2019 by the Society.

\*\*\* END OF CERTIFICATE \*\*\*