



Marine & Offshore
Division

Certificate number: 47722/A1 BV

File number: AP4727

Product code: 2592H

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 below 50kW)

ACS880-104 series.

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

IEC 61800-5-1 (2007).

EC Code: 31.

This certificate is issued to attest that BUREAU VERITAS 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: 29 Dec 2021

For BUREAU VERITAS,

At BV HELSINKI, on 09 May 2017,

Tommy Andersson



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. 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 Division 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 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.veristarm.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=tzy36gu7p5>

BV Mod. Ad.E 530 October 2014

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

- Product model or type designation:

ACS880-104 series

- Product description:

Frequency drives for Marine applications

1.1 - Approval range:

U=690V (range 525 to 690V), current and power rating at 40°C, see §4.6 for deratings at 45°C.

I2 (A)	I _{max} (A)	P _n (kW)	Type designation
7.3	9.5	5.5	ACS880-104-007A3-7
9.8	12.7	7.5	ACS880-104-009A8-7
14.2	18.5	11	ACS880-104-014A2-7
18	23.4	15	ACS880-104-0018A-7
22	29	18.5	ACS880-104-0022A-7
27	35	22	ACS880-104-0027A-7
35	46	30	ACS880-104-0035A-7
42	55	37	ACS880-104-0042A-7
52	68	45	ACS880-104-0052A-7

2. DOCUMENTS AND DRAWINGS :

Product types, Category 1 (summary):

3AXD10000497338_1.pdf; Rev. B

Product types, Category 1.a:

3AXD10000497338_4.pdf; Rev. C

Product types, Category 1.a:

3AXD10000497338_5.pdf; Rev. C

Catalog: ACS880, drive modules:

3AUA0000115038.pdf; Rev.H

ACS880 Marine Supplement (Cat. 1):

3AXD50000037752.pdf; Rev.B

Hardware manual: ACS880-104:

3AUA0000104271.pdf; Rev.E

3. TEST REPORTS :

ABB Oy Drives:

- Tests report ref. 3AXD100000246796
- Tests report ref. 3AXD100000321226
- Tests report ref. 3AXD100000367645
- Tests report ref. 3AXD100000335564
- Tests report ref.3AXD10000081363
- Tests report ref.3AXD10000081404
- Tests report ref.3AXD10000081409
- Tests report ref.3AXD10000088704
- Tests report ref.3AXD10000081636
- Tests report ref.3AXD10000241635
- Tests report ref.3AXD10000251640
- Tests report ref.3AXD10000252249
- Tests report ref.3AXD10000320896
- Tests report ref.3AXD10000320897
- Tests report ref.3AXD10000320898
- Tests report ref.3AXD10000311720

Nemko:

- Tests report ref. 278187-2
- Tests report ref. 270905-1b
- Tests report ref. 270905-1b, Att.1
- Tests report ref. 270905-1b, Att.2
- Tests report ref.267928-1
- Tests report ref.267928-2
- Tests report ref.269768-1
- Tests report ref.269768-1, Att.1
- Tests report ref.269768-1, Att.2

VTT:

- Tests report ref. VTT-S-08265-12

4. APPLICATION / LIMITATION :

- 4.1 - BUREAU VERITAS Rules and Regulations for the Classification of Steel Ships.
 4.2 - Approval valid for ships intended 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 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.
 4.5 - The installation shall comply with the Manufacturer's recommendation described in the above-referenced documentation.
 4.6 - The **ACS880-104 series** use a derating factor as follows: +40 to +50 °C with derating of 1%/1 °C.

5. PRODUCTION SURVEY REQUIREMENTS :

- 5.1 - The above products are to be supplied by **ABB Oy Drives** in compliance with the type described in this certificate.
 5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.
 5.3 - **ABB Oy Drives** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.
 5.4 - **ABB Oy Drives** has declared to Bureau Veritas the following production site(s):

**ABB Drives China
 No.1 Block D A-10
 Jiuxianqiao Beilu
 Chaoyang District
 Beijing
 CHINA**

**ABB AS Low Voltage
 Drives Factory
 Aruküla tee 83
 75301 Jüri
 ESTONIA**

**ABB Oy Drives
 00381 Helsinki
 FINLAND**

6. MARKING OF PRODUCT :

- 6.1 - Trade name.
 6.2 - Date of manufacture and serial number.
 6.3 - Equipment type or model identification under which it was type-tested.

7. OTHERS :

- 7.1 - It is **ABB Oy Drives** 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. 47722/A0 BV issued on 29 Dec 2016 year by the Society.

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