



## Confirmation of Product Type Approval

**Company Name:** ABB OY DRIVES

**Address:** HIOMOTIE 13, OVT 00370763403051, HELSINKI, Finland

**Product:** Frequency Converter

**Model(s):** ACS880-04, Frame size -R10 and R11

**Endorsements:**

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	21-2127416-PDA	25-JUN-2021	24-JUN-2026
Manufacturing Assessment (MA)	19-TU3713893	19-AUG-2019	18-AUG-2024
Product Quality Assurance (PQA)	NA	NA	NA

### Tier

5 - Unit Certification Required

### Intended Service

For use on ABS classed vessels and offshore facilities in accordance with the listed ABS Rules and International Standards.

### Description

The ACS880-04 is a drive module for controlling various type of motors including gas asynchronous AC induction motors, permanent magnet motors, AC induction servomotors and ABB synchronous reluctance motors (SynRM motors).

### Ratings

Ratings

Norminal Voltage: 380V to 690V

Output Power: 200kW to 710kW

Supply Frequency: 50/60Hz (+/-5%)

Input current and output current ratings are as per Technical Data at ACS880-04 drive modules Marine Supplement

Ambient Temperature: +45...55 °C (with derating)

IP rating:IP20 as standard

IP00 with option code +0B051(plastic enclosure at input/output terminal removed)

### Service Restrictions

- Unit Certification is required for semiconductor converters used to control motor drives having a rated power of 100 kW(135 hp) and over intended for essential services as 4-8-3/1.5 of Marine Vessels 2021.
- Detailed requirements for unit certification are in 4-8-3/8.7 of the ABS Rules for Building and Classing Marine Vessels 2021.
- If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
- If the drive is connected to multiple motors, use a separate circuit breaker or fuses for protecting each motor cable and motor against overload. The drive overload protection is tuned for the total motor load. It may not trip due to an overload in one motor circuit only.

### Comments

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

In the temperature range +45...55 °C, the rated output current is derated by 1% for every added 1 °C (1.8 °F)

### Notes, Drawings and Documentation

Drawing No. 3AXD10000768579, R11 690 V Radited Immunity 80 MHz-6 GHz 293698-1-2 EMC ,  
Revision: A, Pages: 18

Drawing No. 3AXD10001203801, R11 500 V Radiated immunity 80 MHz-6 GHz 299863-1-10 EMC test report, Revision: A, Pages: 11

Drawing No. 3AXD10001203806, R11 500 V Radiated Emission 1-6 GHz 299863-1-8 EMC test report, Revision: A, Pages: 12

Drawing No. 3AXD10001203815, R11 690 V Radiated Emission 1-6 GHz 299863-1-7 EMC test report, Revision: A, Pages: 12

Drawing No. 3AXD10001238365, R11 IEC 61800-5-1\_2007+A1\_2016 GND Sc Test Report 65 kA ,  
Revision: A, Pages: 27

Drawing No. ABS Requirements, ABS Requirements, Revision: -, Pages: 1

Drawing No. ACS880 STO Certificate SEBS-A, ACS880 STO Certificate SEBS-A, Revision: -, Pages: 1

Drawing No. ACS880 STO Test Report SEBS-A, ACS880 STO Test Report SEBS-A, Revision: -, Pages: 1

Drawing No. ACS880-04F-429A-7, Motor overload protection 3AXD10000903880, Revision: D, Pages: 1

Drawing No. ACS880-04F-429A-7, Motor overload protection 3AXD10000903880, Revision: -, Pages: 1

Drawing No. Declaration of Conformity 15-LD1389105-PDA, Declaration of Conformity 15-LD1389105-PDA, Revision: -, Pages: 2

Drawing No. Declaration of Conformity IEC\_EN 61800-5-1\_2007+A1\_2017 15-LD1389105-PDA, Revision: A, Pages: 1

Drawing No. HELEM2105000208-4, EMC statement of compliance, Revision: -, Pages: 1

Drawing No. HELEM2105000208-5 , EMC statement of compliance, Revision: -, Pages: 1

Drawing No. R11 IEC 61800-5-1\_2007+A1\_2016, GND Sc Test Report 65 kA 3AXD10001238365, Revision: -, Pages: 1

Drawing No. Report statement ACS880-04 ABS MVR 2021 MVR 4-9-9 Table1, Revision: -, Pages: 17

Drawing No. Report statement ACS880-04 CISPR 16-2-1 Amd.1 Ed. 3.1 b2017, Revision: -, Pages: 1

Drawing No. Report statement ACS880-04 IEC60146-1-1 Ed.4.0 2009-06, Revision: -, Pages: 3

Drawing No. Test Report 273473-1\_3AXD10000284796, 45, SGS Fimko Oy, Finland, Date 13.11.2013, Revision: A, Pages: 17

Drawing No. Test report 272110-1\_3AXD10000243890, 44, SGS Fimko Oy, Finland, Date 12.06.2013, Revision: A, Pages: 12

Drawing No. VTT-S-01320-13\_3AXD10000116165, 46, VTT Expert Services Ltd, Finland, Date 25.02.2013, Revision: A, Pages: 6

Drawing No. VTT-S-03275-13\_3AXD10000235075, 47, VTT Expert Services Ltd, Finland, Date 15.05.2013, Revision: A, Pages: 5

Drawing No. VTT-S-06084-12\_3AXD10000095239, 48, VTT Expert Services Ltd, Finland, Date 12.11.2012, Revision: A, Pages: 6

Drawing No. 3AXD00000596052, 17, ABB Oy Drives, Finland, Date 27.10.2013, Revision Revision: B, Pages: 13

Drawing No. 3AXD10000089327, 18, ABB Oy Drives, Finland, Date 23.11.2018, Revision: B, Pages: 15

Drawing No. 3AXD10000106522, 19, ABB Oy Drives, Finland, Date 19.03.2013, Revision: B, Pages: 13

Drawing No. 3AXD10000241834, 20, ABB Oy Drives, Finland, Date 31.05.2013, Revision: A, Pages: 13

Drawing No. 3AXD10000242533, 21, ABB Oy Drives, Finland, Date 12.03.2014, Revision: B, Pages: 11

Drawing No. 3AXD10000248380, 22, ABB Oy Drives, Finland, Date 24.01.2018, Revision: B, Pages: 15

Drawing No. 3AXD10000249676, 23, ABB Oy Drives, Finland, Date 19.08.2013, Revision: A, Pages: 11

Drawing No. 3AXD10000281074, 24, ABB Oy Drives, Finland, Date 11.12.2013, Revision: A, Pages: 14

Drawing No. 3AXD10000287077, 25, ABB Oy Drives, Finland, Date 04.12.2013, Revision: A, Pages: 13

Drawing No. 3AXD10000309964, 26, ABB Oy Drives, Finland, Date 06.03.2014, Revision: A, Pages: 13

Drawing No. 3AXD10000331826, 27, ABB Oy Drives, Finland, Date 13.04.2021, Revision: D, Pages: 11

Drawing No. 3AXD10000351614, 28, ABB Oy Drives, Finland, Date 04.09.2014, Revision: A, Pages: 11

Drawing No. 3AXD10000351619, 29, ABB Oy Drives, Finland, Date 04.09.2014,, Revision: A, Pages: 11

Drawing No. 3AXD10000352832, 30, ABB Oy Drives, Finland, Date 07.11.2019, Revision: C, Pages: 10

Drawing No. 3AXD10000352833, 31, ABB Oy Drives, Finland, Date 13.04.2021, Revision: B, Pages: 9

Drawing No. 3AXD10000406983, 31, ABB Oy Drives, Finland, Date 12.02.2015, Revision: A, Pages: 11

Drawing No. 3AXD10000413217, 33, ABB Oy Drives, Finland, Date 16.03.2015, Revision: A, Pages: 11

Drawing No. 3AXD10000415632, 34, ABB Oy Drives, Finland, Date 27.03.2015, Revision: A, Pages: 12

Drawing No. ABB Oy Drives and ABB Oy Power Conversion Quality Manual\_rev G\_3AFE001509, Revision: K, Pages: 20

Drawing No. ACS880-04 R10\_R11 Declaration of Conformity MD \_revB, ACS880-04 R10\_R11, Revision: B, Pages: 1

Drawing No. ACS880\_drive\_modules\_catalog\_3AUA0000115038\_RevF, 5, Revision: L, Pages: 120

Drawing No. EN\_ACS880\_01\_04\_C132\_marine\_SUPPL\_B\_3AXD50000010521, 7, Revision: D, Pages: 28

Drawing No. EN\_ACS880\_04\_R10\_R11\_HW\_F\_A3[1], 8, Revision: J, Pages: 418

Drawing No. 275993-1 TRF EMC\_3AXD10000318980, 39, SGS Fimko Oy, Finland, Date 08.04.2014, Revision: A, Pages: 9

Drawing No. 275996 TRF EMC\_3AXD10000318978, 40, SGS Fimko Oy, Finland, Date 08.04.2014, Revision: A, Pages: 13

Drawing No. 276592-1 TR EMC IEC61800-3\_3AXD10000369955, 41, SGS Fimko Oy, Finland, Date 22.10.2014, Revision: A, Pages: 13

Drawing No. 276592-2 TR EMC IEC60533\_3AXD10000369956, 42, SGS Fimko Oy, Finland, Date 22.10.2014, Revision: A, Pages: 11

Drawing No. 277447-1 R10 ABB Spelt ACS880 690V TRF\_3AXD10000403998, 3, SGS Fimko Oy, Finland, Date 20.01.2015, Revision: A, Pages: 111

Drawing No. 277447-2 R11 ABB Spelt ACS880 690V TRF\_3AXD10000403998, 4, SGS Fimko Oy, Finland, Date 12.01.2015, Revision: A, Pages: 110

Drawing No. 224724 TRF EMC\_3AXD10000097342, 35, SGS Fimko Oy, Finland, Date 16.11.2012, Revision: A, Pages: 13

Drawing No. 233660 R11 ABB Spelt ACS880 TRF INST\_3AXD10000159119, 1, SGS Fimko Oy, Finland, Date 31.03.2014, Revision: B, Pages: 128

Drawing No. 243333-1 R10 TRF EMC\_3AXD10000262979, 36, SGS Fimko Oy, Finland, Date 10.09.2013, Revision: A, Pages: 9

Drawing No. 252375 TRF EMC\_3AXD10000315812, 37, SGS Fimko Oy, Finland, Date 28.03.2014, Revision: A, Pages: 8

Drawing No. 254363 R10 ABB Spelt ACS880 TRF 2014-03-31\_3AXD10000159119, 2, SGS Fimko Oy, Finland, Date 16.08.2017, Revision: A, Pages: 102

### **Term of Validity**

This Product Design Assessment (PDA) Certificate remains valid until 24/Jun/2026 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

### **ABS Rules**

- Marine Vessel Rules (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-3/1.7, 4-8-3/8, 4-9-9/Table 9;
- Facilities on Offshore Installations (2021): 1-1-4/9.7, 1-1-A2, 1-1-A3;
- Mobile Offshore Units (2021): 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-1-1/7.9, 4-3-1/11, 6-1-1/9, 6-1-1/13, 6-1-7/12;
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-5-4/10;
- High Speed Crafts (2021): 1-1-4/11.9, 1-1-A2, 1-1-A3, 4-6-1/11, 4-6-4/10, 4-7-9/Table 9;
- Steel Barge Rules (2021): 1-1-4/7.9, 1-1-A3, 1-1-A4

**International Standards**

IACS E10 Rev. 7:2018

IEC 61800-5-1 Ed 2.0:2007+A1:2016

IEC 61800-3 Ed 3.0:2017

IEC 60533 Ed3.0:2015

IEC 60146-1-1 Ed 4.0:2009

**EU-MED Standards**

NA

**National Standards**

NA

**Government Standards**

NA

**Other Standards**

NA



A handwritten signature in black ink, appearing to read "Joseph W. Wilson".

Corporate ABS Programs  
American Bureau of Shipping  
Print Date and Time: 09-Aug-2021 1:47

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.