



Confirmation of Product Type Approval

Company Name: ABB OY DRIVES

Address: HIOMOTIE 13, OVT 00370763403051, HELSINKI, Finland

Product: Frequency Converter

Model(s): ACS880-01

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	21-2127417-PDA	22-JUN-2021	21-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

ABS Classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International standards.

Description

ACS880-01 is a drive for controlling various type of motors including asynchronous AC induction motors, permanent magnet synchronous motors, AC induction servomotors and ABB synchronous reluctance motors.

Ratings

0.55kW to 250kW

230V to 690V

50/60 HZ +/-5%

IP21, (IP55 & IP20 Optional)

Ambient temperature 45 deg C to 55 deg C (with derating)

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 per 4-8-3/1.5 of the Marine Vessels Rules.

- Inspection and testing of equipment should comply with ABS Marine Vessel Rules (2021) 4-8-3/8.7.

- 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.

Comments

- Arrangements and details are required to be submitted and reviewed by ABS for compliance with all other applicable Rule requirements prior to each such installation on board an ABS class vessel.

- Each installation of the specific ACS 880 unit on board an ABS Class Vessel is to be provided with such external fuse protection as recommended by ABB (referenced in ABB ACS880-01 Hardware Manual Rev.H, Doc. No.3AUA0000078093).

- Circuit breakers must not be used without fuses in the USA.

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

Notes, Drawings and Documentation

Drawing No. 3AXD10000903880 Circuit functionality evaluation, Revision: A, Pages: 11

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

Drawing No. ACS880 STO TA Certificate SEBS-A, Revision: -, Pages: 21

Drawing No. ACS880 STO TA Test Report SEBS-A, Revision: -, TÜV NORD Systems GmbH & Co. KG, Germany, Date: 17.06.2020, Pages: 65

Drawing No. Declaration of Conformity 14-LD1294288-2-PDA, Revision: A, Pages: 2

Drawing No. Declaration of Conformity IEC_EN 61800-5-A_2007+A1_2017 14-LD1294288-2-PDA, Pages: 1

Drawing No. R11 IEC 61800-5-1_2007+A1_2016, GND Sc Test Report 65 kA 3AXD10001238365, Revision: 00, SGS Fimko Oy, Finland, Date 08.09.2020, Revision: A, Pages: 12

Drawing No. R2 400 V Radiated Immunity 1.4-6 GHz 293119-1-2 EMC 3AXD10000736788, Revision: A, SGS Fimko Oy, Finland, Date 22.05.2018, Revision: A, Pages: 12

Drawing No. R2 500 V Radiated Emission 1-6 GHz 299863-1-1 EMC test report 3AXD10001203817, SGS Fimko Oy, Finland, Date 18.06.2020, Revision: A, Pages: 13

Drawing No. R3 690 V Radiated Emission 1-6 GHz 299863-1-2 EMC test report 3AXD10001203831, SGS Fimko Oy, Finland, Date 18.06.2020, Revision: A, Pages: 13

Drawing No. R3 690 V Radiated immunity 80 MHz-6 GHz 299863-2-4 EMC test report 3AXD10001203799, SGS Fimko Oy, Finland, Date 05.06.2020, Revision: A, Pages: 31

Drawing No. R4 IEC 61800-5-1_2007+A1_2016, GND Sc Test Report 65 kA_3AXD10001238346, ABB AB Corporate Research, Sweden, Date 21.11.2019, Revision: A, Pages: 11

Drawing No. R5 400 V Radiated Immunity 80 MHz-6 GHz 293119-1-5 EMC 3AXD10000736792, Revision: A, SGS Fimko Oy, Finland, Date 22.05.2018, Revision: A, Pages: 11

Drawing No. R5 500 V Radiated Emission 1-6 GHz 299863-1-4 EMC test report 3AXD10001203821, Revision: A, SGS Fimko Oy, Finland, Date 18.06.2020, Revision: A, Pages: 12

Drawing No. R5 690 V Radiated Emission 1-6 GHz 299863-1-3 EMC test report 3AXD10001203832, Revision: A, SGS Fimko Oy, Finland, Date 18.06.2020, Revision: A, Pages: 13

Drawing No. R8 500 V Radiated Emission 1-6 GHz 299863-1-5 EMC test report 3AXD10001203824, Revision: A, SGS Fimko Oy, Finland, Date 18.06.2020, Revision: A, Pages: 12

Drawing No. R8 500 V Radiated immunity 80 MHz-6 GHz 299863-2-2 EMC test report
3AXD10001203520, Revision: A, SGS Fimko Oy, Finland, Date 05.08.2020, Revision: A, Pages: 12

Drawing No. R8 690 V Radiated Emission 1-6 GHz 299863-1-6 EMC test report 3AXD10001203833,
Revision: A, SGS Fimko Oy, Finland, Date 18.06.2020, Revision: A, Pages: 12

Drawing No. R8 690 V Radiated immunity 80 MHz-6 GHz 299863-2-3 EMC test report
3AXD10001203800, Revision: A, SGS Fimko Oy, Finland, Date 05.08.2020, Revision: A, Pages: 11

Drawing No. R9 IEC 61800-5-1_2007+A1_2016, GND Sc Test Report 65 kA 3AXD10001238347,
Revision: -, ABB AB Corporate Research, Sweden, Date 07.04.2021, Revision: A, Pages: 40

Drawing No. Report statement ACS880-01 ABS MVR 2021 MVR 4-9-9 Table1, Revision: A, Pages: 1

Drawing No. Report statement ACS880-01 IEC60146-1-1 Ed.4.0 2009-06, Revision: A, Pages: 1

Drawing No. Report statement ACS880-01 CISPR 16-2-1 Amd.1 Ed. 3.1 b2017, Revision: A, Pages: 1

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

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

Drawing No. 285151-2-1, Electromagnetic Compatibility EMC Test Report, SGS Fimko Ltd, Revision: A,
Date:22.11.2016, Pages: 14

Drawing No. 285151-2-2, Electromagnetic Compatibility EMC Test Report, SGS Fimko Ltd, Revision: A,
Date:2.11.22016, Pages: 12

Drawing No. 290245-1-1, EMC test report, SGS Fimko Ltd, Revision: A, Date: 29.09.2017, Pages: 12

Drawing No. 290542-1, EMC test report, SGS Fimko Ltd, Revision: A, Date: 02.01.2018, Pages: 11

Drawing No. 3AFE002242, SoDePro,“ The Software Development Process, Revision: H, Pages: 51

Drawing No. 3AXD10000508543, ACS880 R3 690V AC insulation voltage test, Date:01.06.2016, ABB
Oy Drive, Finland, Revision: B, Pages: 1

Drawing No. 3AXD10000580488, ACS880 R3 690V EMC Cond Emission Test, Date:05.01.2018, ABB
Oy Drive, Finland, Revision: D, Pages: 8

Drawing No. 3AXD10000603111, Merille R3 Damp heat, Date: 31.03.2017, ABB Oy Drive, Finland,
Revision: A, Pages: 7

Drawing No. 3AXD10000603369, Merille R3 22kW IEC-Test-Report + STO, ABB Oy Drive, Finland,
Date:20.06.2017, Revision: B, Pages: 31

Drawing No. 3AXD10000611661, ACS880 R3 690V 22kW EMC STO immunity Test report, ABB Oy
Drive, Finland, Date:06.06.2017, Revision: B, Pages: 14

Drawing No. 3AXD10000613080, Merille R3 15kW IP55 IEC-Test-Report, ABB Oy Drive, Finland,
Date:12.05.2017, Revision: A, Pages: 7

Drawing No. 3AXD10000614135, Merille R3 22kW IP55 IEC Inoperative Blower Test, ABB Oy Drive,
Finland, Date: 17.05.2017, Revision: A, Pages: 7

Drawing No. 3AXD10000619906, Merille R3 15 kW Ip55 Dry heat, ABB Oy Drive, Finland, Date:
05.06.017, Revision: A, Pages: 7

Drawing No. 3AXD10000619912, Merille R3 22 kW Ip55 Dry heat, ABB Oy Drive, Finland, Date:
05.06.017, Revision: A, Pages: 7

Drawing No. 3AXD10000637143, Dry heat, Date:14.09.2017, ABB, Revision: A, Pages: 7

Drawing No. 3AXD10000665893, ACS880 R3 690V 22kW +10 and -15percentage Voltage Temperature
Test report, Date:10.10.2017,Revision: A, Pages: 9

Drawing No. R3_immunity, R3_immunity, ABB Oy Drive, Finland, Date:09.12.2017, Revision: A, Pages: 13

Drawing No. VTT-S-03562-17, RESEARCH REPORT_ACS880-01-027A-7 Mechanical test, VTT Expert Services Ltd, Date:20.06.2017, Revision: A, Pages: 9

Drawing No. VTT-S-05334-16, Research report_ACS880 R3 690V Marine Vibration Test, VTT Expert Services Ltd, Revision: A, Date:12.12.2016,Pages: 9

Drawing No. IEC 61800-5-1, Test report 286948-1 ABB ACS880-01 R3 690V TR 2017-08-08 complete signed, SGS Fimko Ltd, Finland, Date:08.08.2018,Revision: A, Pages: 9

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 21/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&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&A3;
- Mobile Offshore Units (2021): 1-1-4/9.7, 1-1-A2&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&A4, 4-5-4/10;
- High Speed Crafts (2021): 1-1-4/11.9, 1-1-A2&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&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 dark ink, appearing to read "Joseph W. Wilson".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 06-Aug-2021 6:20

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.