



Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product. This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 20/AUG/2019. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 22/DEC/2019 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

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.

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.

Product Name: Frequency Converter
Model Name(s): ACS880-01

Presented to:
ABB OY DRIVES
(TYPE APPROVAL ONLY - INVOICES USE WCN 004531)
HIOMOTIE 13
PO BOX 184
Finland

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.
Tier:	5
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 4-8-3/1.5 of Rules. Detailed requirements for unit certification are in 4-8-3/8.7 of the ABS Rules for Building and Classing Steel Vessels 2014.
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. When incorporated in a system of Category I, II or III in accordance with 4-9-3/7.1 and 4-9-3/Table 1 of the ABS Rules for Building and Classing Steel Vessels 2014 the documentation detailed in 4-9-3/Table 2 is to be submitted to ABS or to be available for review by ABS as applicable. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes / Documentation:

Documents: ACS880-01 Hardware Manual ACS880-01 Firmware Manual 3AXD10000114572 List of Type Tests AC880-01 Nemko Test report 166547 S1 to S4 SGS Test report 203997 R5 Nemko Test report 203997 R6 Nemko Test report 203997 R7 Nemko Test report 203997 R8 SGS Test report 203997 R9

Term of Validity:

This Product Design Assessment (PDA) Certificate 14-LD1294288-PDA, dated 23/Dec/2014 remains valid until 22/Dec/2019 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules:


The Rules applicable to this assessment are: -Steel Vessels (2014) 1-1-4/7.7, 1-1-Appendix 3 & 4, 4-9-8/Table 1, 4-8-3/8 -Steel Vessels Under 90 Meters (295 Feet) in Length (2014) 1-1-4/7.7, 1-1-Appendix 3 & 4, 4-7-2/Table 1, 4-6-4/10 -Mobile Offshore Drilling Units (2014) 1-1-4/9.7, 1-1-Appendix 3 & 4, 6-1-7/13.5 -Offshore Support Vessels (2014) 1-1-4/7.7, 1-1-Appendix 3 & 4, 4-9-8/Table 1, 4-8-3/8 -High-Speed Craft (2014) 1-1-4/11.9, 1-1-Appendix 2 & 3, 4-7-9/Table 9, 4-6-4/10 -Aluminum Vessels (1975) 1-1-4/7.7, 1-1-Appendix 3 & 4

National Standards:**International Standards:**

EN 61800-5-1:2007, EN 61800-5-2:2007, EN 60204-1:2006 + A1 2009, IEC/EN 60529:1991 + A1 2000, IEC 60664-1:2007, EN 61800-3:2004, UL 508C:2002, NEMA 250:2008, CSA C22.2 No. 14-10 & GOST R 51321-1:2007

Government Authority:**EUMED:****Others:**

Model Certificate	Model Certificate No	Issue Date	Expiry Date
PDA	14-LD1294288-PDA	23/DEC/2014	22/DEC/2019



ABS Programs

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 was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. 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.