CERTIFICATE NUMBER 18-LD1754604-PDA
EFFECTIVE DATE 28-Sep-2018
EXPIRATION DATE 27-Sep-2023
ABS TECHNICAL OFFICE London

CERTIFICATE OF

# Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

**ABB OY DRIVES**

located at

HIOMOTIE 13, PO BOX 184, HELSINKI, Finland, FIN-00380

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

**Product** Frequency Converter

**Model** ACS880-07CLC; ACS880-104LC; ACS880-107LC; ACS880-304LC+A019; ACS880-307LC+A019; ACS880-604LC; ACS880-607LC; ACS880-1007LC;

This Product Design Assessment (PDA) Certificate remains valid until 27-Sep-2023 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.

American Bureau of Shipping

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**Tier: 5 - Unit Certification Required** TC

**Product:** **Frequency Converter**
**Model:** **ACS880-07CLC Compact Drive**
**ACS880-104LC**
**ACS880-107LC**
**ACS880-304LC+A019**
**ACS880-307LC+A019**
**ACS880-604LC**
**ACS880-607LC**
**ACS880-1007LC**

**Intended Service:**
ABS Classed vessels and offshore installations in accordance with the listed ABS Rules and International Standards.

**Description:**
The ACS880LC drive modules (-x04LC) and drive cabinets (-x7/-x07-xx07LC) for controlling asynchronous AC induction motors, synchronous motors with external excitation, permanent magnet motors, AC induction servomotors and ABB synchronous reluctance motors (SynRM motors)

**Rating:**
Please refer to attachment.

**Service Restriction:**
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 the ABS Steel Vessels Rules 4-8-3/1.5, 4-8-3/5.11, 4-8-3/8 and ABS MODU Rules 4-1-1/ Table 3&4 or 6-1-7/9.1.1(b) and 6-1-7/19.7.
Inspection and testing of equipment should comply with ABS Steel Vessels Rules 4-8-3/8.7. 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 Steel Vessels Rules, 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.

**Comments:**
1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Each particular application configuration is to be specifically approved in conjunction with the relevant system in which the inverter are being used.
3. Drives are not intended for installation in hazardous areas.
4. Drives are to be installed in an Enclosure with IP rating accordance with 4-8-3/Table 2 of the ABS Steel Vessels Rules.
5. Wiring schematics & assembly drawings to be submitted for each installation.
6. Installations are to be in accordance with manufacturer's instruction and installation manual.
7. Approval is for Hardware only.
9. Converter to be installed in "special distribution zone" and "general power distribution zone", in accordance with IEC 60533 provided measures are taken to attenuate these effects on the distribution system.

**Notes/Drawing/Documentation:**
Drawing No. 1, see file name, Revision: 1, Pages: 1
Drawing No. 3AXD10000461740, ACS880LC modules R8i, Revision: -, Pages: -
Drawing No. 3AXD10000540419, ACS880LC A019 D8D module, Revision: -, Pages: -
Drawing No. 3AXD10000552845, Electrical Safety Type Test Report of ACS880-104LC-0850A-7, Revision: -, Pages: -
Drawing No. 3AXD10000594591, Comparison of Vibration Tests ACS880LC, Revision: -, Pages: -
Drawing No. 3AXD10000686145, Alternative Cabinet Construction for ACS880-104LC & 304LC, Revision: -, Pages: -

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Drawing No. 3AXD50000045157, Hardware Manual ACS880-304LC+A019 diode supply modules, Revision: -, Pages: -
Drawing No. 3AXD50000045610, Hardware Manual ACS880-104CL Inverter Modules, Revision: -, Pages: -
Drawing No. 3AXD50000129607, User Manual ACS880-1007LC Liquid Cooling Unit, Revision: -, Pages: -
Drawing No. 3AXD50000131457, Hardware Manual ACS880-07CLC drives, Revision: -, Pages: -
Drawing No. 3AXD50000196111, Hardware Manual ACS880-107LC Inverter Units - PRELIMINARY, Revision: -, Pages: -
Drawing No. Brochure - ABB Drives ACS880-07CLC compact drive, Brochure - ABB Drives ACS880-07CLC compact drive, Revision: -, Pages: -

**Terms of Validity:**
This Product Design Assessment (PDA) Certificate 18-LD1754604-PDA, dated 28/Sep/2018 remains valid until 27/Sep/2023 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.

## STANDARDS

**ABS Rules:**
- Steel Vessel Rules (2018): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-1-1/7.15, 4-8-3/8, 4-9-8/3, 4-9-8/13, 4-9-8/Table 1 and Table 2
- Steel Vessels Under 90 Meters (295 Feet) in Length (2018): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-1-1/37, 4-6-4/10, 4-7-2/Table 1
- Facilities on Offshore Installations (2018): 1-1-4/9.7, 1-1-A2, 1-1-A3
- Offshore Support Vessels (2018): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-1-1/7.15, 4-8-3/5.11, 4-8-3/8, 4-9-8/3, 4-9-8/13, 4-9-8/Table 1 and Table 2
- Mobile Offshore Drilling Units (2018): 1-1-4/9.7, 1-1-A2, 1-1-A3, 4.1.1/7.9, 6-1-1/9, 6-1-1/13, 6-1-7/12, 6-1-7/13.5
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2018): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-1-1/21, 4-5-4/10
- High Speed Crafts (2018): 1-1-4/11.9, 1-1-A2, 1-1-A3, 4-1-1/37, 4-6-4/10, 4-7-9/15, 4-7-9/Table 9 and Table 10
- Steel Barge Rules (2018): 1-1-4/7.9, 1-1-A3, 1-1-A4

**National:**
NA

**International:**
IEC 61800-5-1 Ed2.0:2007
IEC 60533 Ed 3.0 2015
EN 61800-3:2004 +A1:2012
IEC 61000-4-11 Ed2.0:2004
IEC/EN 60204-1:2016

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**Tier: 5 - Unit Certification Required**

**Government:**
NA

**EUMED:**
NA

**OTHERS:** TC
NA