



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

22-2317771-PDA-DUP
21-Dec-2022
20-Dec-2027
Houston ESD - Ship Equipment

CERTIFICATE OF Product Design Assessment

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

LEROY-SOMER REYNOSA MAQUINARIA Y HERRAMIENTA, S. DE R.L. DE C.V.

located at

**AV. INDUSTRIAL REYNOSA LOTE 6, REYNOSA INDUSTRIAL
CENTER, , REYNOSA, TAMAULIPAS, Mexico, 88780**

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: Generator, AC Synchronous
Model: LSAM 40, 42.3, 44.2, 44.3, 46.2, 46.3, 47.2, 47.3, 49.1, 49.3, 50.2, & 52.3
Endorsements:
Tier: 4 - Enrolled in PQA Program

This Product Design Assessment (PDA) Certificate remains valid until 20/Dec/2027 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

Jess Kodrich Totten, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

LEROY-SOMER REYNOSA MAQUINARIA Y HERRAMIENTA, S. DE R.L. DE C.V.

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Tier: 4 - Enrolled in PQA Program

Product: Generator, AC Synchronous
Model: LSAM 40, 42.3, 44.2, 44.3, 46.2, 46.3, 47.2, 47.3, 49.1, 49.3, 50.2, & 52.3
Endorsements:

Intended Service:
Marine & Offshore Applications - AC Synchronous Generator, Non-Propulsion Services.

Description:
See attached PDF: AC Generators Marine Power Table and List of Drawings for Marine Alternators & Equivalence Table for FGW & Caterpillar.

Rating:
Refer to the attached PDF File for Ratings details (Frame, Hertz/RPM, kW, kva, Volts, ABS Ref.).
Speed: 1500 or 1800 RPM
Enclosure Class: IP23 or IP44 (derating 10%)

Service Restriction:

1. Unit Certification is required for each generator of 100 kW and over, intended for essential services as indicated in 4-8-1/7.3.3 of the Marine Vessel Rules, and is to be certified based on type/routine tests performed in accordance with 4-8-3/Table 3 of the Marine Vessel Rules. Please see 4-8-3/3.17 of the Marine Vessel Rules.
2. For generators of less than 100 kW intended for essential services, please refer to 4-8-3/3.1 of the Marine Vessel Rules.
3. 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:
Duplicate PDA's reside with the following locations:

1. Moteurs Leroy Somer Holice - CZECH REPUBLIC,
2. Leroy Somer Electro-Technique Co., Ltd. Fuzhou - CHINA,
3. Leroy Somer - North America - LEXINGTON,
4. Emerpowsys, S. De R.L. De C.V. - Reynosa - MEXICO.

- The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
- Effective means are to be provided to prevent the accumulation of moisture and condensation within the machines when they are idle according to 4-8-3/3.11.5 of the Marine Vessel Rules .
- AC propulsion generators rated above 500 kW are to be provided with a means of obtaining the temperatures at each phase of the stationary windings as per 4-8-3/3.11.6 of the Marine Vessel Rules.
- Also, as per 4-8-3/1.11.2 of the Marine Vessel Rules, generators installed in areas affected by local fixed pressure water spraying or local water-mist fire extinguishing system in machinery spaces are to be suitable for use in the affected area. Where enclosures have a degree of protection lower than IP 44, evidence of suitability for use in these areas is to be submitted taking into account the conditions stated in 4-8-3/1.11.2 of the Marine Vessel Rules .
- Alternator with IP23 protection is acceptable provided the arrangement and installation of the generator is in accordance with conditions stated in the Leroy Somer's Communication Package, "Alternators used in FWBLAFFS, according to SOLAS (Consolidated Edition 2014), as amended, Ch.II-2/10 5.6. This is to be verified by the attending Surveyor at the Shipyard at the time of installation.

Notes/Drawing/Documentation:
See drawing list attached

Terms of Validity:
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Tier: 4 - Enrolled in PQA Program

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.

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STANDARDS

ABS Rules:

2022 Rules for Conditions of Classification, Part 1 - Marine Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

Marine Vessel Rules: 4-8-3/3, 4-8-5/3.7.3

2022 Rules for Conditions of Classification, Part 1 - Mobile Offshore Units Rules 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

Mobile Offshore Units Rules: 6-1-7

National:

NA

International:

NA

Government:

NA

EUMED:

NA

OTHERS:

NA