



CERTIFICATE NUMBER 16-1551541-1-PDA

EFFECTIVE DATE 13 August 2020

EXPIRATION DATE 20 October 2021

ABS TECHNICAL OFFICE Singapore Engineering Services

CERTIFICATE OF Product Design Assessment

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

AUCOM ELECTRONICS LIMITED

located at

PO BOX 80208, CHRISTCHURCH, NEW ZEALAND, 8440

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 Motor Controller

Model EMX4i Series

This Product Design Assessment (PDA) Certificate remains valid until 20 October 2021 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

Manoraaju, 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)

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Email: t.patel@aucom.com

Web: www.aucom.com

Tier: 5 - Unit Certification Required

Product: Motor Controller

Model: EMX4i Series

Intended Service:

Marine & Offshore Application - Non-Propulsion Electrical Power Distribution

Description:

EMX4i soft starters are dedicated to starting or stopping smoothly 3 phase Induction Motors. It also provides motor thermal protection. Refer to attachment for EMX4i range.

Rating:

Voltage: 200VAC to 690VAC

Frame: S1 or S2

Current: 24A to 1620A

Frequency: 45Hz to 66Hz

IP: IP20 (Frame S1), IP00 (Frame S2), IP00 (Frame S3)

See attached document for more info

Service Restriction:

1. Unit Certification is required for this product when used as:

(i) Motor controller of 100 kW (135 hp) and over for motors intended for essential services (Marine Vessel Rules 4-8-1/7.3.3) or for services indicated in 4-8-3/Table 7 as per 4-8-3/1.5 and 4-8-3/5.11 of the Marine Vessels Rules.

(ii) Motor controller of 100 kW (135 hp) and over for motors intended for essential services (Mobile Offshore Unit Rules 4-1-1/3.5) or for services related to additional optional notations requested for the drilling unit as per 6-1-7/9.1.1(b) and 6-1-7/19.7 of the Mobile Offshore Unit Rules.

2. 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:

1. Safe area application only, not to be used in hazardous location.

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

3. Motor Controller Enclosure IP rating to be based on 4-8-3/Table 2 of the Marine Vessel Rules.

4. Type of enclosure is to be selected in accordance with the 4-8-3/1.11 and 4-8-3/Table 2 of the Marine Vessel Rules.

5. If the disconnecting device is not within sight of both motor and controller, or if it is more than 15.25 m (50 ft) from either, it is to be arranged for locking in the open position as per 4-8-4/9.3.2 of the Marine Vessel Rules.

Notes/Drawing/Documentation:

Drawing No. 710-14888-000D, DRAFT 710-14888-00D EMX4i User Manual, Revision: 1, Pages: 140

Report No. EMC 201005-1, IEC 60947-4-2 report by Powerlab Limited Dated: 29 January 2020, Revision: 1, Pages: 40

Report No. EMC 201005-2, IEC 60945 report by Powerlab Limited Dated 29 January 2020, Revision: 1, Pages: 48

Report No. ENV 201006-1, IEC 60068-2-1 report by Powerlab Limited Dated 06 May 2020, Revision: 1, Pages: 12

Report No. ENV 201006-2, IEC 60068-2-2 report by Powerlab Limited Dated 05 May 2020, Revision: 1, Pages: 12

Report No. ENV 201006-3, IEC 60068-2-30 report by Powerlab Limited Dated 20 May 2020, Revision: 1, Pages: 11

Report No. HSVCR91040-1, Vibration Test by Halt & Hass Dated 25 June 2020, Revision: A, Pages: 35

Report No. HSVCR91040-3, Vibration Test by Halt & Hass Dated 30 June 2020, Revision: A, Pages: 36

Report No. pl1718-1, IEC 60947-4-2 by Powerlab Limited Dated 12 March 2020, Revision: 1, Pages: 31

Report No. 50035968_001, S2 (250A) Overload Test Report, Revision: 1, Pages: 1, dated March 2016, TUV Rheinland Laboratory

Report No. 50039238_001, S1 Overload Test Report, Revision: 1, Pages: 1, dated March 2016, TUV Rheinland Laboratory

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Tier: 5 - Unit Certification Required

Report No. 50039238_002, S1 Type 1 Short Circuit Test Report, Revision: 1, Pages: 1, dated March 2016, TUV Rheinland Laboratory
Report No. 50039238_003, S2 IEC Overload Test Report, Revision: 1, Pages: 1, dated March 2016, TUV Rheinland Laboratory
Report No. 50039238_004, S2 Type 2 Short Circuit Test Report, Revision: 1, Pages: 1, dated March 2016, TUV Rheinland Laboratory
Document. UL Test Record 1, Revision: 1, Pages: 1, dated October 2015, Underwriters Laboratories
Document. UL Test Record 2, Revision: 1, Pages: 1, dated October 2015, Underwriters Laboratories
Document. UL Test Record 3, Revision: 1, Pages: 1, dated October 2015, Underwriters Laboratories
Report No. HSVCR90467, S1 Vibration Test report, Revision: 1, Pages: 1, March 2015, Halt & Hass Consulting NZ Ltd
Report No. HSVCR90467-2, S2 Vibration Test Report, Revision: 1, Pages: 1, March 2015, Halt & Hass Consulting NZ Ltd
Report No. L4787085111-EA00, S1 and S2 EMC Radiated emission, Revision: 1, Pages: 1, dated December 2015, Underwriter Laboratories
Report No. L4787240007-EA00, S1 24V EMC Radiated emission, Revision: 1, Pages: 1, dated February 2016, Underwriter Laboratories
Report No. M151118, S1 and S2 EMC Low Frequency, Revision: 1, Pages: 1, dated January 2016, EMC Technologies
Report No. R4787085110-VA00, S1 and S2 Cold Test Report, Revision: 1, Pages: 1, dated February 2016, Underwriters Laboratories
Report No. R4787085110-VB00, S1 and S2 Dry Heat Test Report, Revision: 1, Pages: 1, dated February 2016, Underwriters Laboratories
Report No. R4787085110-VC00, S1 and S2 Humidity Test Report, Revision: 1, Pages: 1, dated February 2016, Underwriters Laboratories
Report No. R4787085111-EA00, S2 EMC Test Report, Revision: 1, Pages: 1, dated February 2016, Underwriters Laboratories
Report No. R4787085111-EB00, S1 EMC Test Report, Revision: 1, Pages: 1, dated February 2016, Underwriters Laboratories
Report No. R4787240007-EA00, S1 24V EMC Test Report, Revision: 1, Pages: 1, dated February 2016, Underwriters Laboratories

Terms of Validity:

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STANDARDS

ABS Rules:

Rules for Conditions of Classification (2020) – 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:
Rules for Building and Classing Marine Vessels: 4-8-2/9.17.1, 4-8-2/9.17.2, 4-8-2/9.17.3, 4-9-9/13.1;

Rules for Conditions of Classification (2020) – Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which

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covers the following:

Rules for Building and Classing Mobile Offshore Units: 4-3-2/9.13.3, 4-3-2/9.13.4, 4-3-2/9.13.5

National:

NA

International:

IEC 60947-4-2 : 2011

Government:

NA

EUMED:

NA

OTHERS:

IACS UR E10 Rev.7