



CERTIFICATE NUMBER 22-2202945-PDA

EFFECTIVE DATE 24-Jan-2022

EXPIRATION DATE 23-Jan-2027

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

GAI-TRONICS

located at

A DIVISION OF HUBBELL LTD, BRUNEL DRIVE, STRETTON
BUSINESS PARK, BURTON UPON TRENT,
UNITED KINGDOM-DE13 0BZ

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 Public Address and General Alarm

Model Elemec3

This Product Design Assessment (PDA) Certificate remains valid until 23 January 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

Vibin Chandrabose, Senior Engineer

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

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Tier: 2 - PDA Issued

Product: Public Address and General Alarm

Model: Elemec3

Endorsements:

Intended Service:

ABS Classed Vessels and Offshore Installations in accordance with the listed ABS Rules and International Standards.

Description:

The E3 PAGA System can be configured in 3 basic formats, as described below

1. Single System
2. Duplicated System
3. N+ 1 System

Single Systems consist of a single Controller and a single group of Power Amplifiers. Access Panels only have a single Connection. Duplicated Systems consist of two systems each identical. Each system consists of a single Controller and a single group of Power Amplifiers. Access Panels have a dual output, one output connected to each system 'A' & 'B'. N+ 1 Systems consist of two Controllers and single group of Power Amplifiers. Access Panels have a dual output, one output connected to each Controller. Each controller will have duplicated Modules attached.

Rating:

Power: 47.5kW (max)

Voltage: 48Vdc / 120Vac / 230 Vac

Service Restriction:

1. Unit Certification is not required for this product. 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.
2. Fault Simulation and factory acceptance tests, as detailed in 4-9-3/Table 2, 3.6 and 3.7 of the ABS Rules for Building and Classing Marine Vessels (2022), are to be witnessed by an ABS Surveyor.
3. On-board complete system and integration testing as detailed in 4-9-3/Table 2, 4.1 and 4.2 of the ABS Rules for Building and Classing Marine Vessels (2022), are to be witnessed by an ABS Surveyor.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.
2. Each vessel installation is to be specifically approved in accordance with the applicable Rules. Where a single system serves for both public address and general alarm emergency functions, the major system components are to be duplicated as required by 4-8-2/11.8.1(v) of ABS Rules for Building and Classing Marine Vessel Rules 2022. The system may be used on passenger vessels provided that two segregated amplifiers and independent loudspeaker circuits are installed as required by 5/13.15.ii of the ABS Guide for Building and Classing Passenger Vessels 2001; update July 2012.
3. Where the installation forms a combined PAGA System it is a Computer Based Category II System as detailed in 4-9-3/7.1 and 4-9-3/Table 1 of the Marine Vessel Rules (2022) and IACS Unified Requirement E22 Rev 2: June 2016 The documentation detailed in 4-9-9/Table 2 of the Marine Vessel Rules (2022) for System Category II is to be maintained and made available to ABS upon request.
4. Electrical equipment intended for installation in hazardous areas is to be of a certified safe type based on the class of the hazardous area at its location of installation as detailed in 4-8-3/13.1 of the ABS Rules for Building and Classing Marine Vessels (2022). Certificates in this regard are to be presented to the ABS Surveyor for verification on a case by case basis.
5. Equipment to be installed in an exterior location on an Offshore Installation, Floating Production Installation,

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Mobile Offshore Drilling Unit or similar that is capable of operation after an Emergency Shut-down is to be suitable for installation in a Hazardous Area Zone 2 location as detailed in 3-8/5.13.vi) of the Rules for Building and Classing Facilities on Offshore Installations 2022, 7-2-4/7.15 of the Rules for Building and Classing Floating Production Installations 2022 and 4-3-5/7.1.4 of the Rules for Building and Classing Mobile Offshore Units (2022).

Notes/Drawing/Documentation:

Drawing and technical Manual

Drawing No. 333-00-0592-101, General assembly PA-GA system front view & footprint, Revision: 2, Pages: 5
Drawing No. 333-00-0592-102, General arrangement PA/GA System B Equipment Cabinet front view & footprint, Revision: 2, Pages: 5

Drawing No. 333-00-0592-202, General Assembly PA/GA System access panel AP1 - Desktop, Revision: 2, Pages: 1
Drawing No. 333-00-0592-203, General arrangement Safe area Access panel AP2 – Bulkhead Indoor, Revision: 2, Pages: 1

Drawing No. 333-00-0592-204, General Arrangement I.S. Access Panel AP5 – Bulkhead Outdoor, Revision: 2, Pages: 1

Drawing No. 333-00-0592-205, General Arrangement Safe Area Access Panel AP2 – 19inches, Revision: 2, Pages: 1

Drawing No. 333-00-0592-206, General Arrangement I.S. Access Panel AP7 - GRP, Revision: 2, Pages: 1

Drawing No. 333-00-0592-301, Termination diagram PA/GA System A Equipment cabinet, Revision: 2, Pages: 4

Drawing No. 333-00-0592-302, Termination diagram PA/GA system B Equipment cabinet, Revision: 2, Pages: 4

Drawing No. 333-00-0592-401, Internal wiring diagram PA/GA system A equipment cabinet (System Controller), Revision: 2, Pages: 10

Drawing No. 333-00-0592-402, Internal wiring diagram PA/GA system B equipment cabinet (power distribution), Revision: 2, Pages: 10

Drawing No: GTC-PUB-B209-3-0520 - Technical Brochure – Elemec3 Networked Public Address and General Alarm System (PA/GA), Revision: -, Pages: 5

Test reports:

Document number: TL14060-EMC – “Test report Electromagnetic Compatibility Marine Type Approval testing”, Revision 1, Pages: 79, issued by MS Testing dated 8 December 2015;

Document number: TL14060-ENV – “Test report Environmental Compatibility Marine Type Approval testing”, Revision 1, Pages: 73, issued by MS Testing dated 8 December 2015;

Document number: TL215553 – “Test report – Marine Type Approval testing (Selected tests only)”, Revision 1, Pages: 50, issued by MS Testing dated 21 December 2021.

Certificates:

Baseefa03ATEX0005X – issue 10, issued 6 December 2021;

IECEX BAS 08.0066X issued 16 December 2021;

BAS21ukex0299x ISSUED 11 December 2021;

Terms of Validity:

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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:

Rules for Conditions of Classification (2022): 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:
2022 Rules for Building and Classing Marine Vessel Rules: 4-8-2/11.5.4, 4-8-2/11.7.1, 4-8-2/11.7.5, 4-8-2/11.8, 4-9-3/11.9, 4-9-9/13, 4-9-9/Table 1 & 2;
2022 Rules for Building and Classing Steel Barges: 3-5-2/9.3

Rules for Conditions of Classification (2022) Light and High Speed Craft: 1-1-4/11.9, 1-1-A2, 1-1-A3, which covers the following:
2022 Rules for Building and Classing High Speed Craft: 4-6-2/15.9, 4-6-2/11.7.1, 4-7-8/9.3.2, 4-7-9/Table 9 & 10;

Rules for Conditions of Classification – Offshore Units and Structures (2022): 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the followings:
2022 Rules for Building and Classing Mobile Offshore Unit Rules: 4-3-2/15.9, 4-3-2/17.1

National:

NA

International:

IACS UR E10, Rev.7:2018,
IMO A.1021(26) Code on alerts and indicators (2009),
Life Saving Appliances (LSA) Code (2010) VII 7.2,
IMO MSC Circ. 808:1997,
IMO Res. A.813(19):1995

Government:

NA

EUMED:

NA

OTHERS:

NA