



CERTIFICATE NUMBER 19-LD1871876-PDA

EFFECTIVE DATE 13-Aug-2019

EXPIRATION DATE 12-Aug-2024

ABS TECHNICAL OFFICE London Engineering Dept.

CERTIFICATE OF

Product Design Assessment

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

AUTO-MASKIN AS

located at

HVAMSVINGEN 22, SKJETTEN, Norway, N-2013

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 Diesel Engine, Monitoring and Control Equipment

Model DCU 408E, DCU 410, DCU 410E, RP 410, RP 410E, SDU 410, SDU 404, RIO 410, RPS

This Product Design Assessment (PDA) Certificate remains valid until 12-Aug-2024 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

Theodoros Chatzidakis, 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 (2010)

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Tier: 5 - Unit Certification Required TC

Product: Diesel Engine, Monitoring and Control Equipment

Model: DCU 408E, DCU 410, DCU 410E, RP 410, RP 410E, SDU 410, SDU 404, RIO 410, RPS

Intended Service:

ABS Classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International standards.

Description:

Electronic marine engine control unit comprises of a main control unit DCU 410 or DCU 410E with graphic / alarm list being indicated on a backlit LCD display with LEDs, buzzer and menu selection push buttons. Sensor signals are connected directly to the DCU as well as connected through Standard Expansion IO units RIO 410 via Modbus RS-485. DCU also communicates with Safety Unit SDU 410 via Modbus RS-485. The DCU could include an optional CLU external power selector dual supply unit. The remote / slave panel RP 410 or RP 410E is similar in appearance to the DCU and is used for monitoring of the DCU through an Ethernet switch using Ethernet links. SDU 404 Safety Unit may be utilised with direct SDU Link Connection to DCU at 19200 baud. Power supply may be via RPS - Redundant Power Selector

Rating:

Power supply: 18 -32 VDC, 24 V DC Nominal;

Power consumption for DCU 410: 6 W

SDU 404 8-16 VDC or 18-32 VDC, 200-600mA (12 VDC or 24 VDC Nominal)

RPS: Primary 0-32 VDC (24 VDC Typical), Secondary 18-32 VDC (24 VDC Typical), Current Consumption 20mA at 24V DC. Output current Continuous 8A at 70C, 16A at 55C, 2 minutes 32A at 55C

Enclosure protection:

IP30 back and IP54 front panel; RPS IP44

DCU 410E & RP410E: IP 56 front panel

Operating temperatures: 0 to 70 degree C

Service Restriction:

Unit Certification is required if it is incorporated in a Category II or Category III system as detailed in 4-9-3/7.1 and 4-9-3/Table 1 of the ABS Rules for Building and Classing Marine Vessels 2019. Unit Certification is to be carried out during Factory Acceptance Test of individual modules at the plant of manufacture or during Factory Acceptance Testing of the overall system.

Comments:

- Tests and approval are for hardware and firmware only. Each configuration and external connection is to be specifically approved.
- 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 Marine Vessels 2019 the documentation detailed in 4-9-3/Table 2 is to be submitted to ABS or is 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.
- Unless specifically directed by the Administration, this approval is not to be construed as a substitute for flag Administration's approval for SOLAS (Consolidated Edition 2014), as amended.

Notes/Drawing/Documentation:

Drawing No. 5005, DCU 410 / DCU 408 Firmware Revisions, Revision: -, Pages: 1

Drawing No. 5008, SDU 410 Firmware Revisions, Revision: -, Pages: 1

Drawing No. 5009, RIO 410 Firmware Revisions, Revision: -, Pages: 1

Drawing No. 5011, RP 410 Firmware Revisions, Revision: -, Pages: 1

Drawing No. 5022, SDU 404 Firmware Revisions, Revision: -, Pages: 1

Drawing No. DCU 410E Datasheet, Datasheet, Revision: -, Pages: 1

Drawing No. NO-900611, ISO 9001:2015 Certificate, Revision: -, Pages: 1

Drawing No. QIG_RIO 410 and RIO 210, Manual, Revision: -, Pages: 1

Drawing No. QIG_DC408E, Manual, Revision: -, Pages: 1

Drawing No. QIG_DC410E, Manual, Revision: -, Pages: 1

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Tier: 5 - Unit Certification Required

Drawing No. QIG_RP410E, Manual, Revision: -, Pages: 1

Drawing No. QIG_RPS, Manual, Revision: -, Pages: 1

Drawing No. QIG_SDU404, Manual, Revision: -, Pages: 1

Drawing No. QIG_SDU410, Manual, Revision: -, Pages: 1

Terms of Validity:

This Product Design Assessment (PDA) Certificate 19-LD1871876-PDA, dated 13/Aug/2019 remains valid until 12/Aug/2024 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:**

The Rules/Guides applicable to this assessment are:

- Marine Vessels Rules (2019): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-8-3/1.7, 4-9-3/5, 4-9-3/7, 4-9-3/9 Table 2, 4-9-9/7, 4-9-9/13, 4-9-9/Table1;
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2019): 1-1-4/7.7, 1-1-A3, 1-1-A4
- Steel Barge Rules (2019): 1-1-4/7.9, 1-1-A3, 1-1-A4
- Facilities on Offshore Installations (2019): 1-1-4/9.7, 1-1-A2, 1-1-A3
- Mobile Offshore Units (2019): 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-1-1/7.9, 4-3-1/11, 6-1-1/9, 6-1-1/13

National:

NA

International:

IACS UR E10 Rev 6: 2014

IACS UR E22 Rev 2: 2016 (CAT III)

Government:

NA

EUMED:

NA

OTHERS:

NA

TC