



Confirmation of Product Type Approval

Company Name: DEIF A/S

Address: FRISENBORGVEJ 33, SKIVE, Denmark, DK-7800

Product: Power Management System

Model(s): Delomatic 4, PCM 4-5.

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	21-2086898-PDA	09-MAR-2021	08-MAR-2026
Manufacturing Assessment (MA)	18-EG3574567	25-OCT-2018	27-NOV-2023
Product Quality Assurance (PQA)	NA	NA	NA

Tier

5 - Unit Certification Required

Intended Service

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

Description

Used for generator power management, control, protection and monitoring functions on board marine vessels, offshore and industrial applications of up to 15 generators integrated into one system. Hardware units include: Generator unit rack system (DGU), Modules (PCM, IOM, SCM) and Display unit (DU) & Operator panel (AOP); See attachment for details.

Ratings

Auxiliary power Supply: 24 VDC nominal

Operating temp.: -25...70#C (-13...158 Deg F)

Service Restrictions

Power management system is categorized as computer based systems category II and therefore unit certification is required as indicated on ABS Rules for Building and Classing Marine Vessels (2021) 4-1-1/table 3 item 35; 4-9-3/7.1 and 4-9-3/Table 1. Test & Documentation for computer based systems Category II as indicated on ABS Rules for Building and Classing Marine Vessels (2021) 4-9-3/table 2 must be followed by the manufacturer.

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

Tests and Approval are for hardware only. Each installation is to be specifically approved.

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

Notes, Drawings and Documentation

Drawing No. EPC 810_03, Test Data, DEIF A/S, Denmark, Date: 09.02.2021, Revision: -, Pages:51

Drawing No. EPC 810_01, Manufacturer Statement, Revision: A, Pages: 1

Drawing No. EPC 810_02, DM-4 Marine data sheet 4921240294 UK, Revision: C, Pages: 1

Drawing No. 13B DNV GL Voltage Variations, 13B DNV GL Voltage Variations, Revision: -, Pages: 7

Drawing No. 14A LR witness Insulation test, 14A LR witness Insulation test, Revision: -, Pages: 4

Drawing No. 15B DNV GL witness Voltage Interruptions, 15B DNV GL witness Voltage Interruptions, Revision: -, Pages: 6

Drawing No. 16B DNV GL witness Low-frequency Interference, 16B DNV GL witness Low-frequency Interference, Revision: -, Pages: 6

Drawing No. 4A DNV GL witness Dryheat Test, 4A DNV GL witness Dryheat Test, Revision: -, Pages: 5

Drawing No. 5B DNV GL witness Electrostatic Discharge, 5B DNV GL witness Electrostatic Discharge, Revision: -, Pages: 6

Drawing No. 6A LR witness DEIF Dampheat test, 6A LR witness DEIF Dampheat test, Revision: -, Pages: 6

Drawing No. 6B LR witness Slow transients - Surge, 6B LR witness Slow transients - Surge, Revision: -, Pages: 11

Drawing No. 9A LR witness Vibration Test, 9A LR witness Vibration Test, Revision: -, Pages: 5

Drawing No. DM-4_13B, Voltage Variations ABS Signed low res, Revision: -, Pages: 8

Drawing No. DM-4_9A, Vibration ABS Signed Low res, Revision: -, Pages: 8

Drawing No. DM4_423922, SQP_BASIS_SW_DM4_423922, Revision: -, Pages:10

Drawing No. DM4_432506, SQP_Application_SW_DM4_432506, Revision: -, Pages: 7

Drawing No. FAT report 20140827, DM-4 LR FAT report 20140827, Revision: -, Pages: 22

Drawing No. FAT report 20141113, DM-4 DNV GL FAT report 20141113, Revision: -, Pages: 22

Drawing No. FMEA Test report 20140827, DM-4 LR FMEA Test report 20140827, Revision: -, Pages:22

Drawing No. FMEA report 20141113, DM-4 DNV GL FMEA report 20141113, Revision: -, Pages: 13

Drawing No. GL witness EUT3237 performance, 02A DNV GL witness EUT3237 performance, Revision: -, Pages: 11

Drawing No. IPA0324-04, IPA0324-04 Product Documentation part 1-2, Revision: -, Pages: 174

Drawing No. IPA0324-04_, IPA0324-04_Submitted documents, Revision: -, Pages: 19

Drawing No. JST20140512A, DM 4 update 4-5 differences JST20140512A, Revision: -, Pages: 3

Drawing No. Type Certificate 4124030060A, DM-4 Type Certificate 4124030060A, Revision: -, Pages: 1

Drawing No. IPA0324-04-W1, Summary report Module PCM 4.5-DM-4, Revision: -, Pages:14

Drawing No. witness EUT3238 performance, 02A DNV GL witness EUT3238 performance, Revision: -, Pages: 10

Drawing No. IPA0324-04 Technical documentation, IPA0324-04 Technical documentation, Revision: -, Pages: 19

Drawing No. IPA0324-04 Test data sheets PART 1, IPA0324-04 Test data sheets PART 1, Revision: -, Pages: 129

Drawing No. IPA0324-04 Test data sheets PART 2, IPA0324-04 Test data sheets PART 2, Revision: -, Pages: 10

Drawing No. IPA0324-04 Test data sheets PART 3, IPA0324-04 Test data sheets PART 3, Revision: -, Pages: 9

Drawing No. IPA0324-04 Test data sheets PART 4, IPA0324-04 Test data sheets PART 4, Revision: -, Pages: 17

Drawing No. IPA0324-04 Test data sheets PART 5, IPA0324-04 Test data sheets PART 5, Revision: -, Pages: 8

Drawing No. IPA0324-04 Test data sheets PART 6, IPA0324-04 Test data sheets PART 6, Revision: -, Pages: 2

Drawing No. IPA0324-04 Test data sheets PART 7, IPA0324-04 Test data sheets PART 7, Revision: -, Pages: 8

Drawing No. IPA0324-04 Test data sheets PART 8, IPA0324-04 Test data sheets PART 8, Revision: -, Pages: 2

Drawing No. IPA0324-04 Test data sheets PART 9, IPA0324-04 Test data sheets PART 9, Revision: -, Pages: 56

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 08/Mar/2026 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.

ABS Rules

- Marine Vessels Rules (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-9-2/7, 4-9-3/5.1, 4-9-3/5.3, 4-9-3/7, 4-9-3/11, 4-9-9/3, 4-9-9/7, 4-9-9/13, 4-9-9/Table 1 and 4-9-9/Table 2;
- Facilities on Offshore Installations (2021): 1-1-4/9.7, 1-1-A2, 1-1-A3, 3-7/3.3, 3-7/3.5;
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4;
- High Speed Crafts (2021): 1-1-4/11.9, 1-1-A2, 1-1-A3, 4-6-1/9, 4-6-1/11, 4-6-1/17, 4.7.1/9, 4-7-8/3.1, 4-7-8/3.3, 4-7-8/3.5, 4-7-8/3.7, 4-7-8/3.9, 4.7.8/7.1, 4.7.8/7.3, 4.7.8/9, 4-7-9 Table 9 and 4-7-9/ Table 10;
- Steel Barge Rules (2021): 1-1-4/7.9, 1-1-A3, 1-1-A4; 4-1-3/5.
- Mobile Offshore Units (2021): 1-1-4/9.7, 1-1-A3, 1-1-A4, 6-1-1/9, 6-1-1/13; 4-3-1/9, 4-3-1/11, 4-3-1/17;

International Standards

IACS UR E10, Rev.7, 2018

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards

NA



A handwritten signature in dark ink, appearing to read "Joseph W. Wilson".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 07-Apr-2021 3:14

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

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 prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.