



Confirmation of Product Type Approval

Company Name: DEIF A/S

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

Product: Power Management System

Model(s): PPM 300+ PPU300+GPU300 +DU 300

Endorsements:

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	20-2051490-PDA	12-JAN-2021	11-JAN-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 Facilities in accordance with the listed ABS Rules and International Standards.

Description

The PPM 300 Protection and Power Management system is applicable for control, protection and supervision of marine power plants ranging from single genset to fully integrated and engineered power management solutions. Each controller contains all the functions needed to protect and control a diesel generator, an emergency diesel generator, a shaft generator, a shore connection, or a bus tie breaker. Up to 64 PPM 300 controllers may be interconnected to create one integrated system.

The PPM 300 controllers work together as multi-master system, so if a controller fails, the remaining controllers continue to function as a system.

Redundant communication between the controllers is possible such that if a communication link fails, the system continues to function.

The PPU 300 Paralleling and Protection Unit is a highly configurable controller designed for marine use. The controller contains the functions required to protect and control a generator and its breaker (specifically, a diesel generator, a shaft

generator, a shore connection, or a bus tie breaker). For communication redundancy, the controllers can be connected in a ring. If there is a disruption or failure, the DEIF proprietary ring protocol changes the communication path within 100 milliseconds

The GPU 300 Generator Protection Unit is designed to protect electrical equipment with a breaker, for example, a diesel generator, a bus bar, or a motor. Each controller can be connected to up to three

non-essential load groups (NEL). Each controller includes processor technology and high-speed internal communication to provide fast protection functions.

GPU 300 has the redundant ethernet network ring communication.

The DU 300 display unit has push-buttons. The operator, with the right authorization, can also check and/or change the IO and parameter configuration such as the controller mode and priority, close and open the breaker, and start and stop the genset. It includes a color graphic screen for readout of live data and access to alarms and parameters.

Ratings

Power supply: +12/24 VDC.

Operating temperature: Display unit -20 - +70, Control Rack -40 - +70.

Ingress Protection: IP20 all slots mounted.

Application software

- GPU 300 1.0.x.x;
- PPU 300 1.0.x.x,
- PPM 300 1.0.x.x
- PICUS 1.0.x.x
- DU 1.0.x.x

Service Restrictions

1. Unit Certification as detailed in 4-9-9/13.3 of the ABS Rules for Building and Classing Marine Vessels 2020 is required for this product 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 2020. Unit Certification may be carried out during Factory Acceptance Test of the overall system.

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

2. Tests and approval are for hardware only.

Notes, Drawings and Documentation

Drawing No. 792_15, GPU 300 Data sheet 4921240530 UK, Revision: B, Pages: 1

Drawing No. 792_16, PPM 300 data sheet 4921240464 UK, Revision: I, Pages: 1

Drawing No. 792_17, PPU 300 Data sheet 4921240563 UK, Revision: E, Pages: 1

Drawing No. 792_18, GPU 300 designer's handbook 4189341032 UK, Revision: B, Pages: 1

Drawing No. 792_19, PPM 300 Designer's handbook 4189340911 UK, Revision: J, Pages: 1

Drawing No. 792_20, PPU 300 designers handbook 4189341097 UK, Revision: E, Pages: 1

Drawing No. 792_21, FAT witnessed DNV GL, Revision: A, Pages: 1

Drawing No. 792_22, LR SWC 17-20004-E1 UK, Revision: E1, Pages: 1

Drawing No. 792_23, Manufacturer Statement-new module ACM 3.2, Revision: A, Pages: 1

Drawing No. 792_24, LR ISO 9001:2015 Certificate, Pages: 1

Drawing No. 792_25, Manufacturer Statement- ML300, Revision: A, Pages: 1

Drawing No. 792_27, Manufacturer Statement Standards, Revision: A, Pages: 1

Drawing No. EPC 792_11, 02B RF electromagnetic field immunity DU 300, Revision: A, Pages: 1

Drawing No. EPC 792_12, 02B RF electromagnetic field immunity ML 300, Revision: A, Pages: 1

Drawing No. EPC 792_13, 16A Radiated disturbance DU 300, Revision: A, Pages: 1

Drawing No. EPC 792_14, 16A Radiated disturbance ML 300, Revision: A, Pages: 1

Drawing No. EPC792_1, IPA 331-26 A tests, Revision: A, Pages: 1

Drawing No. EPC792_10, Multi-line 300 - Software - FMECA - ANSI 87, Revision: A, Pages: 1

Drawing No. EPC792_2, IPA 331-26 B tests, Revision: A, Pages: 1

Drawing No. EPC792_3, IPA 331-26 C tests, Revision: A, Pages: 1

Drawing No. EPC792_4, Witness test reports DNV GL signed, Revision: A, Pages: 1

Drawing No. EPC792_5, Witness test reports LR signed, Revision: A, Pages: 1

Drawing No. EPC792_6, SQP_ACM 3.2, Revision: A, Pages: 1

Drawing No. EPC792_7, Multi-line 300 - ACM 3.2 reliability block diagram, Revision: A, Pages: 1

Drawing No. EPC792_8, Multi-line 300 - Protection reliability block diagram, Revision: A, Pages: 1

Drawing No. EPC792_9, Multi-line 300 - Software - FMECA - ACM32, Revision: A, Pages: 1

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 11/Jan/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 (2020): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-9-2/3, 4-9-2/5.1, 4-9-2/5.3, 4-9-2/7, 4-9-3/5.1, 4-9-3/5.5, 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 (2020): 1-1-4/9.7, 1-1-A2, 1-1-A3, 3-7/3.3, 3-7/3.5, 3-7/3.7;
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2020): 1-1-4/7.7, 1-1-A3, 1-1-A4;
- High Speed Crafts (2020): 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 (2020): 1-1-4/7.9, 1-1-A3, 1-1-A4; 4-1-3/5.

- Mobile Offshore Units (2020): 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, 4-3-1/15, 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 black ink, appearing to read "Joseph W. Wilson".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 29-Jan-2021 5:53

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.