



Certificate No. 03-002045/031724

TYPE APPROVAL CERTIFICATE

This is to certify that this product complies with the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products.

TYPE AND DESCRIPTION OF PRODUCT:

POWER MANAGEMENT SYSTEMS GPU 300, PPU 300, PPM 300 & AMC 300

MANUFACTURER:

DEIF A/S
Frisenborgvej 33, DK-7800 Skive
DENMARK

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

CRS RULES FOR THE CLASSIFICATION OF SHIPS

FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.

APPROVAL IS VALID UNTIL: 2028-06-13

Place and date: Split, 2024-06-14 Seal _____

Marinko Popović, dipl.ing.

NOTE: This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Croatian Register of Shipping of any modification or changes to the product in order to obtain a valid certificate.

DETAILED PRODUCT DESCRIPTION:

Product is built as modular base mounted hardware platform ranging from simple stand-alone units to integrated power management systems. Flexible units can be expanded with input and output modules.

The units are designated for the following applications:

- GPU 300 - Generator protection unit,
- PPU 300 - Paralleling & protection unit,
- PPM 300 - Protection & power management,
- AMC 300 - Advanced Programmable Controller.

General hardware configuration:

Type	Function
PSM 3.1, PSM 3.2	Power supply module
ACM 3.1, ACM 3.2	Alternating current module
IOM 3.1, IOM 3.2, IOM 3.3, IOM 3.4	I/ O module
EIM 3.1	Engine interface module
GAM 3.1, GAM 3.2	Governor and AVR module
PCM 3.1	Processor and communication module
DU 300	Display unit

Software:

Principal software:	Ver.1.0.x.x
Utility software:	PICUS

Note: Not applicable for AMC 300

APPLICATION / LIMITATIONS:

CRS Rules for the classification of ships.

Documents for the actual application are to be submitted for approval in each case.

The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.

For AMC 300 type, only hardware is covered by this certificate.

TYPE APPROVAL DOCUMENTATION:

Data sheet:

- gpu-300-data-sheet-4921240530-uk
- ppm-300-data-sheet-4921240647-uk
- ppu-300-data-sheet-4921240563-uk
- amc-300-data-sheet-4921240613-uk

Construction drawings:

- gpu-300-installation-instructions-4189341031-uk
- ppm-300-installation-instructions-4189340909-uk
- ppu-300-installation-instructions-4189341098-uk
- amc-300-installation-instructions-4189341265-uk

Wiring diagram:

- 4157200501 Rev. L, 4157200503 Rev. K, 4157200504 Rev. K, 4157200505 Rev. F, 4157200507 Rev. J, 4157200508 Rev. F, 4157200509 Rev. G, 4157200538 Rev. E, 4157200546 Rev. D, 4157200559 Rev. E

Instruction manual:

- gpu-300-designer-s-handbook-4189341032a-uk
- gpu-300-operator-s-manual-4189341034a-uk
- ppm-300-designers-handbook-4189341333-uk
- ppm-300-operator-s-manual-4189340910-uk
- ppu-300-designers-handbook-4189341097-uk
- ppu-300-operator-s-manual-4189341099-uk
- amc-300-codesys-guidelines-4189341271-uk
- amc-300-user-manual-4189341264-uk

Software:

- Software life-cycle overview, Ref: SM, 170424
- Software Quality Plan for GPU 300 V.1.0.1.1
- Software Quality Plan for PPM 300 V.1.0.25.2
- Software Quality Plan for PPU 300 V.1.0.26.3

Test Reports:

- IPA 311-11 test data
- IPA 331-26 A tests
- IPA 331-26 B tests
- IPA 331-26 C tests
- IPA 331-05 Rack test data
- IPA 331 Display Unit test data

DEIF A/S TYPE TEST

- Performance test, Ref: 4910212100F, dated 2020-01-29 / 2020-01-31
- Damp heat cyclic Marine, Ref: 4910213115G, dated 2020-01-30
- Damp heat steady state, Ref: 4910213420H, dated 2020-02-10
- Vibration test, Ref: 4910214100K, dated 2020-01-30
- Insulation resistance, Ref: 491215100I, dated 2020-02-10
- Electrical fast transients (EFT) - Burst, Ref: 4910217501Q, dated 2020-01-30
- RF E-field immunity, Ref: 4910217502M, dated 2020-01-30
- Surge, Ref: 4910217506M, dated 2020-01-31
- Electrical fast transients (EFT) - Burst, Ref: 4910217501Q, dated 2018-10-23
- Cold test, Ref: 4910213100G, dated 2018-10-23
- Electrostatic discharge (ESD), Ref: 4910217505J, dated 2018-10-23
- Variations DC Power Ports, Ref.: 4910217513I, dated 2018-10-23
- Interruptions - DC Power Port, Ref.: 4910217515H, dated 2018-10-23
- Low frequency interference – DC supply voltage, Ref.:4910217516F, dated 2018-10-23

MARKING OF PRODUCT:

The Manufacturer, type designation, main data and serial number.

CONDITIONS FOR CERTIFICATION:

Any modification of the hardware, firmware or software having an impact on the product performance or functionality has to be validated with type testing.