



## TYPE APPROVAL CERTIFICATE

No. ELE070522XP

**This is to certify** that the product below is found to be in compliance with the applicable requirement of the RINA type approval system.

<i>Description</i>	<b>Power Management System</b>
<i>Type</i>	<b>PPM 300, GPU 300, PPU 300 series</b>
<i>Applicant</i>	<b>DEIF A/S Frisenborgvej 33 7800 Skive DENMARK</b>
<i>Manufacturer</i>	<b>DEIF A/S</b>
<i>Place of manufacture</i>	<b>Frisenborgvej 33 7800 Skive DENMARK</b>
<i>Reference standards</i>	<b>Rules for the classification of ships.- Part C - Machinery, systems and fire protection. - Ch.3, Sect. 6, Table 1.</b>

Issued in **GDAŃSK** on **July 25, 2022.** This Certificate is valid until **July 24, 2027**



  
RINA Services S.p.A.  
Jaroslaw Kondracki

This certificate consists of this page and 1 enclosure





**TYPE APPROVAL CERTIFICATE**  
**No. ELE070522XP**  
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**PPM 300, GPU 300, PPU 300 series**

**Product description:**

The PPM 300, GPU 300 and PPU 300 are modular alarm, control and protection systems for marine power plants and Hybrid systems.

**PPM 300 Protection and Power Management**  
Comprising following components:

Software version: 1.0.x.x

PSM 3.1 - Power supply module  
PSM 3.2 - Power supply module  
ACM 3.1 - AC measurement module  
ACM 3.2 - AC measurement module  
IOM 3.1 - Input/output module  
IOM 3.2 - Input/output module

IOM 3.3 - Input/output module  
IOM 3.4 - Input/output module  
EIM 3.1 - Engine input module  
GAM 3.1 - Governor/AVR module  
GAM 3.2 - Governor/AVR module  
PCM 3.1 - Processor and communication module

**GPU 300 Generator protection unit**  
Comprising following components:

Software version: 1.0.x.x

PSM 3.1 - Power supply module  
ACM 3.1 - AC measurement module  
IOM 3.1 - Input/output module  
PCM 3.1 - Processor and communication module

**PPU 300 Paralleling and Protection Unit**  
Comprising following components:

Software version: 1.0.x.x

PSM 3.1 - Power supply module  
PSM 3.2 - Power supply module  
ACM 3.1 - AC measurement module  
ACM 3.2 - AC measurement module  
IOM 3.1 - Input/output module  
IOM 3.2 - Input/output module

IOM 3.3 - Input/output module  
IOM 3.4 - Input/output module  
EIM 3.1 - Engine interface module  
GAM 3.1 - Governor/AVR module  
GAM 3.2 - Governor/AVR module  
PCM 3.1 - Processor and communication module

**DU 300 Display unit**

Software version: 1.0.x.x

**List of Protection functions:**

Protection function	ANSI no.	Levels
Over-voltage $U>$ , $U>>$	59	2
Under-voltage $U<$ , $U<<$	27	2
Voltage unbalance $UUB>$	47	1
Over-current $3I>$ , $3I>>$	50TD	2
Fast over-current $3I>>>$	50/50TD	2
Directional over-current	67	2
Current unbalance $IUB>$	46	1
Negative Sequence Current	46	1
Zero Sequence Current	51lo	1
Inverse time overcurrent $I_t>$	51	1
Over-frequency $f>$ , $f>>$	81O	2
Under-frequency $f<$ , $f<<$	81U	2



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**PPM 300, GPU 300, PPU 300 series**

**List of Protection functions:**

Directional power P>, P>>	32	2
Reverse power P<, P<<	32R	2
Reactive power export Q>, Q>>	40O	2
Reactive power import Q<, Q<<	40U	2
Earth inverse time over-current It>	51G	1
Synchronisation	25	n.a.
Generator Differential Current	87G	2
Over-voltage U>, U>>	59	2
Under-voltage U<, U<<	27	2
Voltage unbalance UUB>	47	1
Over-frequency f>, f>>	81O	2
Under-frequency f<, f<<	81U	2

**Documents:**

Manuals: - Paralleling and Protection Unit PPU300 4189341097I, 4189341099J, Protection and Power Management PPM300 4189340911N, 4189340909P, 4189340910N;  
Software Quality Plan: - CP11272 V.1.0.3.0, 410084 V.1.0.13.0, CP11162 V.1.0.13.1, 410092 V.1.14.0, 410091 V.1.0.15, 410176 V.1.0.15.1, 410176 V.1.0.16.0, 421794 ML300, 421704, 410091 V.1.0.13.0, CP11683 V.1.0.13.1, 410091 V.1.0.14.0, CP11757 V.1.0.14.1, CP11788 V.1.0.14.2, 410176 V.1.0.15.0, 410091 V.1.0.13.0, CP11541 V.1.0.13.1, CP11683 V.1.0.13.2, 410091 V.1.0.14.0, CP11757 V.1.0.14.1, 410176 V.1.0.15.0, 410007 ACM 3.2, 421704 ACM 3.1, 421704 ML300-PCM3.1 ;  
Drawings: -4157200544 rev D, 4157200539 rev F.  
- DoC 4910290104 Rev. D dated 22 december 2016 UK; DoC 4910290105 Rev. B dated 12 September 2016;

**Test reports:**

DEIF: - 4910217516F, 4910217501Q, 4910217502M, 4910213100G, 4910213105G, 4910213100G, 490213105G, 4910213115G, 4910213120H, 4910213100M, 4910215100I, 4910215105I, 4910216501K, 4910216502I, 49102175H, 4910217501Q, 4910217502M, 4910217505J, 4910217506M, 4910217507L, 4910217513J, 4910217505J, 4910213115G, 4910217506M, 4910213120H, 4910217507L, 4910214100M, 4910217513J, 4910215100I, 4910215105I, 4910217515H, 4910216501K, 4910216502I  
- FAT PPM 300 dated 2017-11-01; FAT PPU 300 dated 13.01.2017;  
DELTA: - DANAK-19/17105 Rev. A dated 16 November 2016 ;

**Remarks:**

- The products fulfill EC-Code: 3a1/41.
- The equipment fulfill the EMC requirements for installation in power distribution zone.
- Drawings of each system configuration is to be sent for approval before installation on board.
- Electrical protection featured by this system may be used in addition to circuit breaker intrinsic protections.
- In case of major software modification detailed information and suitable documents are to be submitted to the Society.

*This certificate annulus and replaces previous Type Approval Certificate ELE170618XG*

**GDAŃSK July 25, 2022**

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