



TYPE APPROVAL CERTIFICATE
No. ELE060125XP

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>	Power Management System
<i>Type</i>	iE 350 Marine, PPM 300, GPU 300, PPU 300 series
<i>Applicant</i>	DEIF A/S
	Frisenborgvej 33
	7800 Skive
	DENMARK
<i>Manufacturer</i>	DEIF A/S
<i>Place of manufacture</i>	Frisenborgvej 33
	7800 Skive
	DENMARK
<i>Reference standards</i>	Rules for the classification of ships.- Part C - Machinery, systems and fire protection. - Ch.3, Sect. 6, Table 1.

Issued in **GDANSK** on **June 18, 2025**. *This Certificate is valid until* **June 18, 2030**



RINA Services S.p.A.
Adam Mejer

This certificate consists of this page and 1 enclosure



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iE 350 Marine, PPM 300, GPU 300, PPU 300 series

Product description:

The IE350 is highly flexible, modular control and I/O system. It can be designed as stand alone unit for generator/bus-tie/ shore-connection/ shaft generator/ hybrid system control and protection to integrated power management system.

IE350 Marine Power Management comprising following components:

Comprising following components:

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

Software version: 1.0.x.x

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 for modular 300 series including PPM, PPU, GPU
PCM 3.3- iE350 Marine Series

GPU 300 Generator protection unit

Comprising following components:

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

Software version: 1.0.x.x

PPU 300 Paralleling and Protection Unit

Comprising following components:

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

Software version: 1.0.x.x

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 for modular 300 series
PCM 3.3- iE350 Marine Series

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	51Io	1
Inverse time overcurrent It>	51	1
Over-frequency f>, f>>	81O	2
Under-frequency f<, f<<	81U	2

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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

Software versions:

Software	Details	Version
IE PLC Bundle	Signed software bundle with components	2.0.3.x
BSP	Board Support Package (Operating System)	5.0.0.x
CODESYS	CODESYS runtime	3.5.18.x
CODESYS IDE	PC software for development of CODESYS applications	3.5.18.x
CODESYS TSP	iE 350 CODESYS Target Support Package (TSP)	1.3.0.x

Hardware modules

- Power Supply Module PSM 3.1 and extension PSM 3.2
- Alternating Current Modules ACM 3.1 and AMC 3.2
- Input and output modules IOM 3.1, IOM 3.2 and IOM 3.3
- Engine interface module EIM 3.1
- Governor and AVR module GAM 3.1, and GAM 3.2 (iE350 Marine, PPU 300 and PPM 300 only)
- Processor and Communication Module PCM 3.3 (iE350 Marine, IACS UR E 27 compliant)
- Display unit DU 300 (Multi-line 300, GPU/PPU/PPM 300)
- Display unit iE7 (iE350 Marine)

Documents:

Block schematics: 4157200611 rev.: D

Datasheets: iE350 Marine Intelligent Energy Controller Data sheet 492124065F, iE350 PLC Programmable Automation Controller 4921240659E

Manuals: - Paralleling and Protection Unit PPU300 4189341097I, 4189341099J, Protection and Power Management PPM300 4189340911N, 4189340909P, 4189340910N;

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Documents:

Software Quality Plan: - Product iE350 MarinePM V2.04.1 proj. 424356; ML 300 ACM 3.1 proj. 421704; CODESYS add-on V.1.0.5.0 proj.: 460156; CODESYS add-on V.1.0.3.1 proj.: 410176, CODESYS SP18 TSP PCM 3.3 proj 424356; DEP proj.: 424356; PPM 300 V.1.0.25.1 proj.: 424349; PPM 300 V.1.0.25.2 proj.: 424349; PPM300 V1.0.26.0 proj.: ML300-226033, ML300-228150; PPU 300 V.1.0.21.1 proj.: ML300-171178; PPU 300 V.1.0.26.1 proj.: 424349; PPU 300 V.1.0.26.2 proj.: 424349; PPU 300 V.1.0.26.3 proj.: 410267; PPU 300 V.1.0.26.0 proj.: 424349;

Test reports:

DEIF: - 4910213100H; 4910217501R; 4910213105H;
- FAT iE350 Marine dated 27.05.2024; iE 350 Marine Power Management dated 28.05.2024
DELTA: - DANAK-19/17105 Rev. A dated 16 November 2016 ;

Remarks:

- 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 ELE070522XP

GDAŃSK June 18, 2025

