



## Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

<b>Manufacturer</b>	<b>DEIF A/S</b>
<b>Address</b>	Frisenborgvej 33, Skive, 7800, Denmark
<b>Type</b>	Control Units
<b>Description</b>	intelligent Energy Controller, Display Unit
<b>Trade Name</b>	iE 250 (*), iE7
<b>Application</b>	Marine and Offshore applications for use in environmental categories ENV1, ENV2 and ENV3 as defined in Lloyd's Register Type Approval System - Test Specification Number 1 - July 2024
<b>Specified Standard</b>	Manufacturer's specification (*) IACS UR E27 Rev.1 (2023) and Part 6, Chapter 1, Section 2.16 of the Rules and Regulations for the Classification of Ships, July 2024
<b>Ratings</b>	Power supply: 12V DC and 24V DC
<b>Additional Tests</b>	Low Temperature (-30°C/16hrs.) Ingress Protection rating (IP6X front / IP20 rear)
<b>Other Conditions</b>	The iE 250 may provide generator safety functions as a back up device only, to provide design diversity as required by the LR Rules and Regulations.  (*) Compliance with above listed specified standard requirements are limited

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to operation in “trusted networks”. Any wireless communication function like access management and/or use control are excluded.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document TSO/24-021690\_iE250 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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## Appendix

<b>DESCRIPTION</b>	<b>iE 250 – intelligent Energy Controller (V.2.0.x.x)</b>
	<b>Controller – PCM2.1</b>
Communication/ Connection	1x RS-282/RS-485 1x RS-485 3x CAN 1x Ethernet bridged to switch 3x Ethernet switch connections (RJ45) 1x USB (host type A) 1x DisplayPort
Channel	4x individual analogue channels (configurable as input or output) 8x individual digital channels (configurable as input or output)
Software	BSP V.5.0.x.x Codesys V.1.3.x.x WebConfig V.1.0.x.x

### **MIO2.1**

Measurements	AC current measurement via CT's (1...5A) AC voltage measurement A- and B-side (100...690V) Frequency measurement (45...66Hz)
Channel	Analogue output for GOV and AVR 8x bi-directional configurable channels 1x Emergency stop input 8x digital inputs
Communication	1x EtherCAT (RJ45)
Software	V.1.0.x.x

<b>DESCRIPTION</b>	<b>iE 7 – Local Display</b>
Communication/ Connection	1x DisplayPort 1x USB 2.0 (type C) 1x USB (type A) & 1x USB (type B)
Software	V.1.0.x.x