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# 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>	Power Distribution Systems & Power Supplies
<b>Description</b>	Protection and power management unit  Software version PPM-3: 3.0x.x Software version GPU-3: 3.1x.x Software version PPU-3: 3.1x.x Software version MDR-2: 2.0x.x
<b>Trade Name</b>	PPM-3, PPU-3, GPU-3 and MDR-2
<b>Application</b>	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2 and ENV3 (power distribution zone) as defined in LR Type Approval System, Test Specification Number 1 – 2002.
<b>Specified Standard</b>	Manufacturer's specification
<b>Ratings</b>	Power supply (VDC): 12 and 24 Input voltage (VAC): 100-690 Input current (A): 1 or 5 Input frequency (Hz): 30-70



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A member of the Lloyd's Register group

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<b>Additional Tests</b>	Low temperature (-25C°/16 hours) Enclosure IP5X (display unit front)
<b>Other Conditions</b>	The complete installation is subject to a separate plan appraisal according to applicable Rules and Regulations when installed on LR classed vessels. GPU-3 and PPU-3 may be used as safety system for diesel engine provided the LR requirements for programmable electronic systems used in safety critical systems are fulfilled. This certificate does not contain LR Software Conformity Assessment.

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.

<b>Previous Version:</b>	This certificate supersedes certificate number 09/20024 (E5) issued on 30.09.2019 and certificate number 01/20019 (E5) issued on 14.04.2016 which are hereby cancelled.
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The Design Appraisal Document HTS/ETS 41027-21/TW and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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**LLOYD'S REGISTER TYPE APPROVAL – DESIGN APPRAISAL DOCUMENT**  
**ISSUED BY: HAMBURG TECHNICAL SUPPORT OFFICE (HPC1462042)**  
**ISSUED TO: DEIF A/S, SKIVE, DENMARK**  
**FOR: PROTECTION AND POWER MANAGEMENT UNIT**  
**TYPES PPM-3, PPU-3, GPU-3 AND MDR-2**

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register Type Approval System Procedure TA14 Version 04 (September 2020) and this Design Appraisal Document forms part of the Certificate.

**APPROVAL DOCUMENTATION**

Unnumbered	Type Approval Application Checklist	24.02.2021
HPC1662083 / HPC1962114	Production Quality Assessment Form	13.01.2020
4921240275M_UK	Data sheet Multi differential protection relay, MDR-2	undated
HTS/ETS 38841-19	Design Appraisal Document for Certificate No. 09/20024 (E5)	30.09.2019
HTS/ETS 33481-16	Marine Design Appraisal Document for Certificate No. 01/20019 (E5)	14.04.2016
01/20019 (E5)	LR Type Approval Certificate	14.04.2016

  
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**Supplementary Type Approval Terms and Conditions**

*Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.*

*Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.*

*Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations. Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the Lloyd's Register Type Approval System Procedure.*

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