



Lloyd's  
Register

# 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.*

This certificate is issued to:

<b>PRODUCER</b>	DEIF A/S Frisenborgvej 33 7800 Skive Denmark
<b>DESCRIPTION</b>	Protection and power management unit
<b>TYPE</b>	PPM-3, PPU-3 and GPU-3  Software version PPM-3: 3.0x.x Software version GPU-3: 3.1x.x Software version PPU-3: 3.1x.x
<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>ADDITIONAL TEST</b>	Low temperature (-25°C/16 hrs)
<b>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
<b>Certificate No.</b>	09/20024 (E5)
<b>Issue Date</b>	30 September 2019
<b>Expiry Date</b>	29 September 2024
<b>Sheet</b>	1 of 2



LR0311.1.2016.06

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#### OTHER CONDITIONS

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.

*The Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.*

*If the specified standards are amended during the validity of this certificate, the product is to be re-approved prior to it being supplied to vessels to which the amended standards apply.*

*The Design Appraisal Document No. HTS/ETS 38841-19 and its supplementary Type Approval Terms and Conditions form part of this Certificate.*

**Certificate No.** 09/20024 (E5)  
**Issue Date** 30 September 2019  
**Expiry Date** 29 September 2024  
**Sheet** 2 of 2

  
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LR031.1.2016.06



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# Design Appraisal Document

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Date  
**30 September 2019**

Please quote this reference number on all future communications  
**HPC 1462042/38841-19/TW/AC**

**THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2017  
ISSUED TO: DEIF A/S, SKIVE, DENMARK  
FOR: PROTECTION AND POWER MANAGEMENT UNIT  
TYPE APPROVAL CERTIFICATE NO. 09/20024 (E5)**

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

## APPROVAL DOCUMENTATION

Unnumbered	Type Approval Application Checklist	16.07.2019
HTS/ETS 34177-16	Design Appraisal Document for Certificate No. 09/20024 (E4)	21.09.2016
HPC1662083 + HPC1862086	Production Quality Assessment Form	27.09.2018



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LR031.1.2016.06

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FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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Date  
**30 September 2019**

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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 LR Type Approval System Procedure.*

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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Part 2

Power Distribution Systems / Protective Devices

Producer/Licence No.	Type	Standard	Rating	Category/ Additional Tests	Remarks	Cert. No.
<p>Deif A/S Friesenborgvej 33, DK-7800 Skive, Denmark</p>	<p>Protection and power management unit</p> <p>Types</p> <p>PPM-3, PPU-3 and GPU-3</p> <p>Software version PPM-3: 3.0x.x Software version GPU-3: 3.1x.x Software version PPU-3: 3.1x.x</p>	<p>Manufacturer's specification</p>	<p>Power supply (Vdc): 12 and 24 Input voltage (Vac): 100-690 Input current (A): 1 or 5 Input frequency (Hz): 30-70</p>	<p>ENV1, ENV2, ENV3 (2002) Low temperature (-25C°/16 hours)</p>	<p>Expires: 29 September 2024</p> <p>The complete installation is subject to a separate plan appraisal according to applicable Rules and Regulations when installed on LR classed vessels.</p> <p>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.</p>	<p>09/20024 (E5)</p>