



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:

PRODUCER	DEIF A/S Frisenborgvej 33 7800 Skive Denmark
DESCRIPTION	Engine controller and generator controller
TYPES	EC-1M and GC-1M
APPLICATION	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2 and ENV3 as defined in Lloyd's Register Type Approval System, Test Specification Number 1 – 2002.
ADDITIONAL TEST	Low temperature (-25°C/16 hrs) Enclosure IPX4 (display unit front)
STANDARD	Manufacturer's specification

Certificate No.	06/20046 (E2)
Issue Date	15 November 2017
Expiry Date	08 November 2021
Sheet	1 of 2



Thorsten Wolff
Hamburg Technical Support Office
Lloyd's Register EMEA

Lloyd's Register EMEA
71 Fenchurch Street, London EC3M 4BS

Lloyd's Register EMEA
Is a subsidiary of Lloyd's Register Group

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.



RATINGS

Power supply:	12 and 24 VDC
Type EC-1M:	
Input voltage:	50 – 550 VAC
Input frequency:	30 – 70 Hz
Relay outputs:	3 x 30VDC/AC 2A 2 x 30 VDC/AC 8A 1 x 24VDC 1A (status relay)
Type GC-1M:	
Input voltage:	50 – 550 VAC
Input current:	1 or 5 A
Input frequency:	30 - 70 Hz
Relay outputs:	5 x 30VDC/AC 2A 2 x 30 VDC/AC 8A 1 x 24VDC 1A (status relay)

OTHER CONDITIONS

The complete installation is subject to a separate plan appraisal according to applicable Rules and Regulations when installed on LR classed vessels.

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 36100-17 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Certificate No.	06/20046 (E2)
Issue Date	15 November 2017
Expiry Date	08 November 2021
Sheet	2 of 2

Thorsten Wolff
Hamburg Technical Support Office

Lloyd's Register EMEA

LR031.1.2013.12

Thorsten Wolff
Hamburg Technical Support Office
Lloyd's Register EMEA

*Lloyd's Register EMEA
71 Fenchurch Street, London EC3M 4BS*

Lloyd's Register EMEA
Is a subsidiary of Lloyd's Register Group



Design Appraisal Document

Lloyd's Register EMEA
Hamburg Technical Support Office
Am Sandtorkai 41
20457 Hamburg
Telephone +49 (0)40 328107-0 Fax +49 (0)40 328107-480
E-mail: hamburg-technical-support@lr.org

Date
15 November 2017

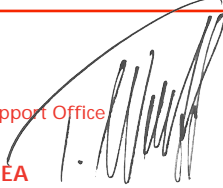
Please quote this reference number on all future communications
HPC1762170/36100-17/TW/KW

THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2017
ISSUED TO: DEIF A/S, DK-7800 SKIVE, DENMARK
FOR: ENGINE CONTROLLER AND GENERATOR CONTROLLER
TYPES EC-1M AND GC-1M
TYPE APPROVAL CERTIFICATE NO. 06/20046 (E2)

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	Application Checklist	06.10.2017
ETS 25640-11	Marine Design Appraisal Document for Certificate No. 06/20046(E1)	08.11.2011
HPC1462075	Production Quality Assessment Form	13.01.2017
4921240308D	Data sheet EC-1M	undated
4921240309D	Data sheet GC-1M	undated

Thorsten Wolff
Hamburg Technical Support Office

Lloyd's Register EMEA



LR031.1.2013.12
Thorsten Wolff
Senior Specialist
Electrotechnical Systems
Hamburg Technical Support Office
Lloyd's Register EMEA
T +49 (0)40 328107-445
E thorsten.wolff@lr.org

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

Lloyd's Register EMEA
Is a member of Lloyd's Register group

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

Lloyd's Register EMEA
Hamburg Technical Support Office
Am Sandtorkai 41
20457 Hamburg
Telephone +49 (0)40 328107-0 Fax +49 (0)40 328107-480
E-mail: hamburg-technical-support@lr.org

Date
15 November 2017

Please quote this reference number on all future communications
HPC1762170/36100-17/TW/KW

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

Lloyd's Register EMEA
Is a member of Lloyd's Register group

