

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 LR Type Approval System.

This certificate is issued to:

PRODUCER Heinzmann GmbH & Co. KG

PLACE OF PRODUCTION Am Haselbach 1
79677 Schönau (Schwarzwald)
Germany

DESCRIPTION Digital Generator Management for island and mains parallel operation

TYPE DGM-02 "THESEUS"

Comprising of the following "Sub-Types":

Sub-Type	Article No.
<i>Digital Generator Management Units:</i>	
THESEUS Basic	620-00-150-00 320-00-160-03b (Printed Circuit Board)
THESEUS Medium	620-00-151-00 320-00-160-03b (PCB)
THESEUS Extended	620-00-152-00 320-00-160-03b (PCB)
<i>Digital Bus Tie Management Unit:</i>	
THESEUS Group	620-00-153-00 320-00-160-03b (PCB)

Certificate No. 07/20036

Issue Date 27 August 2007

Expiry Date 26 August 2012

Sheet 1 of 2


Jörn Brüggemann
Hamburg Design Support Centre
Lloyd's Register EMEA

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

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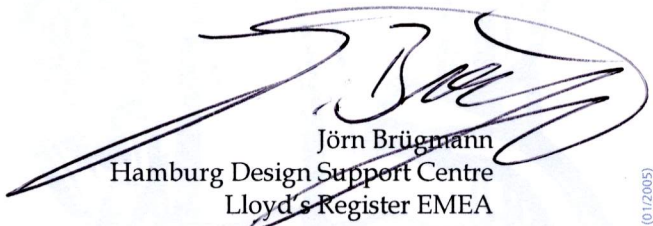
APPLICATION	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2 and ENV3 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 - 2002.
ADDITIONAL TESTS	Low Temperature Test at 5° C for 2 hrs.
OTHER CONDITIONS	Final arrangement of the DGM-02 modules onboard of LR classed vessels is to be subject of the Lloyd's Register Plan Approval Process.

"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 No. ETS 17589-07 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Certificate No.	07/20036
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Sheet	2 of 2

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Marine Design Appraisal Document

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Email: hamburg-design-support@lr.org

Date
27 August 2007

Quote this reference on all future communications
HPC 0620492/17589-07/JB/WR

**THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2002
ISSUED TO: HEINZMANN GMBH CO. KG
FOR: DIGITAL GENERATOR MANAGEMENT SYSTEM "THESEUS"
TYPE: DGM-02
TYPE APPROVAL CERTIFICATE NO. 07/20036**

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register's Type Approval System, 2002 and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Form LR6606	Approval Services Request for quotation	20.11.2006
FO-TL009-2	Software versionen	04.07.2007
FO-TLxxx2	Checkliste zur Serienfreigabe neuer und geänderter Software	23.07.2007
DZ_THE_001_07_03_e_1_2007	THESEUS, DGM-02, Leaflet	01.2007
Unnumbered	DGM-02 Performance Test, rev. 01	28.02.2007
Unnumbered	DGM-02 System Specification, version 01	10.2006
Manual DG e01-06	Hardware Specification, DGM -02, THESEUS	01.2006
Druckschrift 11-06	THESEUS, DGM-02 "Beschreibung der Hardware"	17.11.2006
Unnumbered	THESEUS, DGM-02 „Functional Description“, ver. 00	10.2006
Unnumbered	THESEUS, DGM-02 „Software Beschreibung“, ver. 00	10.2006
Unnumbered	THESEUS, DGM-02 „Program Flow Charts“, ver. 00	07.2006
DGM-02 FTA	THESEUS, DGM-02 „Fault Tree Analysis“, ver. 00	09.2006
Manual DG 05.001-e /01-06	THESEUS, DGM-02 „Installation and Commissioning Guide“	01.2006
VA-TL 005	Verfahrensansweisung, rev. 1	undated
DZ,THE_002_05_06_e_2_2005	THESEUS DGM-02, Leaflet	02.2005

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

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TEST REPORTS

Unnumbered	THESEUS, DGM-02 Performance Test	28.02.2007
71315753	Vibration Test, Temperature Test, Climatic and insulation resistance Tests by TÜV SÜD Product Service GmbH	03.01.2007
71315753 Appendix	Appendix to Technical Report No. 71315753 by TÜV SÜD Product Service GmbH	07.03.2007
P06-Z-00486-001	Electromagnetic Interference Tests (EMI) by EMC Test NRW GmbH	26.02.2007
Test Report, 28.02.2007	Power Failure Test, Power Supply Variation Test, High Voltage Test	28.02.2007
Test Report, 29.01.2007 ETS0620492	Surge Test of the AC-Voltage Inputs works inspection of Heinzmann premises in Schönau	29.01.2007 03.2007

DRAWINGS

320-00-160-03b	Heinzmann THESEUS DGM-02	05.2007
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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.



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