

MARINE DIVISION

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Certificate number: 06447/C0 BV

File number : AP 2850

Product code : 44211

This certificate is not valid when presented without the full attached schedule composed of 7 sections

TYPE APPROVAL CERTIFICATE

as per Bureau Veritas Classification Rules

This certificate is issued to

DEIF A/S
Skive - DENMARK

for the type of product

ELECTRICAL POWER MANAGEMENT SYSTEMS

DELOMATIC 3 System

Regulations and standards :

BUREAU VERITAS Rules for the Classification of Steel Ships.

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements of the Regulations and standards mentioned above.

This certificate is valid until : 31 Oct 2008

At Paris la Défense, on : 19 Oct 2007

For BUREAU VERITAS,
By order of the Secretary

Approval office

Local office : BV FREDERICIA
Surveyor : H. Andersen

L.COURREGELONGUE



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION :

The Power Management System **DELOMATIC 3** has been designed for Control and Protection of Generators. The DELOMATIC 3 System consists of a DEIF Generator Unit (DGU) and Control Panels (CP-1).

1.1 - The DGU Comprises the following modules:

- Power supply module PSM-1
- Control module CM-1
- Control module CM-2(1)
- Input module IPM-1
- Output module OPM-1
- Analog output module AOM-1
- Measuring/synchronising modules SCM-1
- Measuring/synchronising modules SCM-2
- Current relay module CRM-1
- Protection relay module PRM-1

Note : 1) with ARC net communication module.

1.2 - Firmware Versions implemented:

- CM-1 Ver. 1.03
- CM-2 Ver. 1.05
- SCM-1 Ver. 1.16
- SCM-2 Ver. 1.06
- CP-1 Ver. 1.09

2. DOCUMENTS AND DRAWINGS :

According to Documents N°s:

430280010-1/2/3/4/5/6/7/8/9, 430280011-1/2,
4921240070A, 4921240070A, 4921340002A, 4921240044, 4302990106,
4220090108, 492124004-4/6/8, 492124005-0/2/4/6/8, 492124006-0/2/4/6,
4921240164C, 4921240183A, 2034220014 Rev D,
4157200291, 2034220016, 2034220017, 20010330/NMJ dated 22/Nov./99.

Documents filed in AP 2850.

3. TEST REPORTS :

DEIF: Test reports N°s:

EMS/JU dated: 95.01.16/ 94.11.29 / 95.01.23/95.09.04 / 95.11.10 / 95.08.25,
JU/ju dated: 95.03.20, JU dated: 95.02.13, 94.08.23,
JHO/ac dated: 94.03.18, JU dated: 94.08.29/ 94.05.26/ 94.09.28/ 94.05.19,
20010330/NMJ dated: 22/Nov./99.

4. APPLICATION / LIMITATION :

4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.

4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

4.3 - BUREAU VERITAS Environmental Category, **EC Code: 31.**

4.4 - The equipment fulfils the EMC requirements for installation in General power Distribution Zones.

4.5 - In case of AUT notations issuance, machinery protection required by the Rules and based on data processing techniques are to be duplicated by another and different system.

4.6 - Each application and configuration is to be submitted to the Society's examination prior to fitting on board.

4.7 - The equipment, once installed on board ship, is to be tested in accordance with the above referred Regulations under the supervision of a Society's Surveyor.

4.8 - Only Hardware and Software and/or Firmware successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer are covered by this certificate.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The **DELOMATIC 3** is to be manufactured, examined and tested by **DEIF A/S** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Arrangements shall be made for a Society's Surveyor to attend the relevant tests and examinations at manufacturer's works or to perform the relevant audits when an alternative survey scheme (BV Mode I) has been agreed. Relevant Bureau Veritas certificate will be issued after satisfactory completion of the procedure.

6. MARKING OF PRODUCT :

6.1 - Maker's name or trade mark, Serial number of the units, Equipment type number or model identification under which it was type-tested.

6.2 - Alternatively, the marking may be presented on a display at equipment start-up.

6.3 - The title and version of each software element included in the installed software system shall be either marked or displayed on command on the equipment.

6.4 - When the marking and the title and version of the software are displayed only on the display, such information shall also be included in the equipment manual.

7. OTHERS :

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the equipment at any time and that:

**DEIF A/S
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DENMARK**

will accept full responsibility for informing shipbuilders, shipowners or their sub-contractors of the proper methods of use and general maintenance of the equipment and the conditions of this approval.

7.2 - This certificate supersedes the Type Approval Certificate N° 06447/B0 BV issued on 07/08/2001 by the Society.

***** END OF CERTIFICATE *****