



Marine & Offshore

Certificate number: 07644/E0 BV

File number: ACE 10/120/02

Product code: 2658H

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

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

DEIF A/S

Skive - DENMARK

for the type of product

GENERATOR CONTROL AND PROTECTION UNITS

Generator control and protection units, type Uni - Line.

Requirements:

BV Rules for the Classification of Steel Ships.

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate is a renewal of certificate N° 07644/D0 BV expiring on 14/11/2019

This certificate will expire on: 14 Nov 2024

For Bureau Veritas Marine & Offshore,

At BV FREDERICIA, on 15 Aug 2019,

Jesper Jensen



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 Marine & Offshore. 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 & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore 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 :

Voltage relays:

RMV - 112 D (under / overvoltage protection),
 RMV - 122 D (overvoltage protection),
 RMV - 132 D (undervoltage protection),
 RMV - 142 D (under / overvoltage protection).

Current relays:

RMC - 111 D (short circuit relay),
 RMC - 121 D (short circuit current relay),
 RMC - 122 D (overcurrent and short circuit relay),
 RMC - 131 D (differential current relay),
 RMC - 132 D (dual overcurrent relay),
 RMC - 142 D (stator earth fault relay).

Power relays:

RMP - 111 D (overload relay),
 RMP - 112 D (overload / reverse power relay),
 RMP - 121 D (reverse power relay),
 RMQ - 111 D (loss of excitation relay),
 RMQ - 121 D (overexcitation relay).

Synchronizers and accessories:

FAS - 113 DG (synchronizer),
 FAS - 115 DG (synchronizer),
 HAS - 111 DG (paralleling relay),
 EPN - 110 DN (electronic potentiometer).

Load sharing units:

LSU - 112 DG (load sharing unit),
 LSU - 113 DG (load sharing unit and -P> protection),
 LSU - 114 DG (load sharing unit and start/stop outputs),
 LSU - 122 DG (var load sharing unit).

Other relays:

RMF - 112 D (frequency relay),
 LMR - 111 D (loss of mains relay),
 LMR - 122 D (loss of mains relay),
 RMT - 111 Q 96 (phase sequence relay),

2. DOCUMENTS AND DRAWINGS :

2.1 - DEIF A/S data sheets N°s:

4921240096D/F, 4921240102D/E, 4921240104F/H, 4921240106F/H, 4921240108E/F,
 4921240110E/F, 4921240112D/F, 4921240114D/G, 4921240116D/F/G, 4921240118D/F,
 4921240120F/H, 4921240122D/F, 4921240124D/F, 4921240126E/F, 4921240128D/E,
 4921240131F, 4921240141D, 4921240144D/F, 4921240148C/E, 4921240214D,
 4921240217D, 4921240220C, 4921240223B/C, 4921240260A/B and 4921240130N.

2.2 - DEIF A/S drawings N°s:

- 4157200374 Rev. C, 4157200358 Rev. B, 4157200375 Rev. C,
- 4157200378 Rev. D, 4157200379 Rev. D.

2.3 - DEIF A/S minor changes list ref. N° 20040220/NMJ.

2.4 - User Documentation ref. IPA0274-04W.

3. TEST REPORTS :

DEIF A/S test reports N°s:

- **3A1** dated 16.01.2004, **4A1** dated 16.01.2004, **6A1** dated 16.01.2004,
- **9A1** dated 16.01.2004, **14A1** and **14A2** dated 16.01.2004, **15A1** and
- **15A2** dated 21.10.2003, **16A** dated 20.02.2004 and 27.08.2009, **18A1** dated 23.02.2004,
- **1A2** dated 04.09.2008, **1B1** to **1B4** dated 18.02.2004, **2B1** dated 18.02.2004, **2B2 to 2B6** dated 05-09-2008,
- **5B1** dated 18.02.2004, **6B1** to **6B8** dated 18.02.2004, **9B** dated 18.02.2004,
- **10B** and **12B** dated 18.02.2004, **13B** and **15B** dated 18.02.2004, **16B** dated 18.02.2004.
- **2A1, 2A2, 2A3, 2A4**, dated 15.Feb.2012.

4. APPLICATION / LIMITATION :

BV Rules for the Classification of Steel Ships.

5. PRODUCTION SURVEY REQUIREMENTS :

5.1 - The Generator control and protection units, type Uni - Line are to be supplied by **DEIF A/S** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **DEIF A/S** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **DEIF A/S** has declared to Bureau Veritas the following production site(s):

DEIF A/S
Frisenborgvej 33
DK-7800 Skive
DENMARK

6. MARKING OF PRODUCT :

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

7. OTHERS :

7.1 - It is **DEIF A/S** 's responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This Certificate supersedes the Type Approval Certificate N° 07644/D0 BV issued on 14 Nov 2014 by the Society.

*** END OF CERTIFICATE ***