



Marine & Offshore

Certificate number: 47822/A0 BV

File number: AP4765

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

LEROY SOMER DEI (Les Agriers)
ANGOULEME - FRANCE

for the type of product

GENERATOR CONTROL AND PROTECTION UNITS
Automatic Voltage Regulator D700

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships, Offshore Units, Naval ships and Yachts

EC Code : 33

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 will expire on: 30 Jul 2023

For Bureau Veritas Marine & Offshore,

At BV BORDEAUX, on 30 Jul 2018,

Gabriel ZIMMER



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:

The **D700** is an Automatic Voltage Regulator for Marine and Offshore application.

1.1 - Product's datas:

Description	Minimum value	Maximum value
Supply-(Vac)	50	277
Supply-(Vdc)	50	400
Voltage sensing (Vac) 3 phase range	0	230 or 530
Excitation current (A)	0	25
Excitation current max at 25°C (A)		50
Alternator frequency (Hz)	30	400
Voltage adjustment range (% rated V)	-10	10
Quadrature droop adjustment range (%)	0	10
Ambient Temp (°C)	-40	+65
Weight (kg)		3.09

1.2 - Software & Firmware:

Software version	Firmware version
EasyReg Advanced	Firmware 1.XX

2. DOCUMENTS AND DRAWINGS:

- General summary-List of document, Ref : D 170407 01 RDE FJ A, dated 07/04/2017
- D700 Installation and maintenance, Ref : 5513 en, dated October 2017
- D700 Specifications, Ref : 002449, rev C, dated 18/08/2015
- D700 General system specification, Ref : 002449, rev B, dated 10/04/2017

3. TEST REPORTS:

LEROY SOMER :

- D700 Safety Report, Ref : 2014.1080_SR, rev A, dated 10/02/2016
- D700 Essai a la flamme ,Ref : CR171002 01 RDE LR A, rev A, dated 02/10/2017
- D700 Conducted Emissions test, rev 4, dated 19/09/2016
- D700 Conducted Immunity test, rev 1, dated 13/01/2016
- D700 Electrical Fast Transient Burst Immunity test, rev 0, dated 13/01/2016
- D700 ESD Test, rev 3, dated 19/09/2016
- D700 Surge Immunity Test, rev 0, dated 02/02/2016
- D700 test on generator, Ref : ELEC FCTL 002449-12, rev A, dated 23/11/2017

EMITECH :

- Mecanical test report, Ref : R240-GNC-16-104753-1/A (00), dated 25/10/2016
- EMC Test report, Ref : RC051-16-102014-1-A Ed_0, dated 29/08/2016

GERAC :

- D700 EMC Test report , Ref : RET/2017/174, rev A, dated 26/10/2017

4. APPLICATION / LIMITATION:

- 4.1 - BUREAU VERITAS Rules and Regulations for the Classification of Steel Ships, Offshore Units, Naval ships and Yachts.
- 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: 33.**
- 4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.
- 4.5 - 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.
- 4.6 - Only Hardware and Firmware / Software 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 above products are to be supplied by **LEROY SOMER DEI (Les Agriers)** 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 - **LEROY SOMER DEI (Les Agriers)** 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 - **LEROY SOMER DEI (Les Agriers)** has declared to Bureau Veritas the following production site

LEROY SOMER DEI (Les Agriers)
Zi Agriers
16000 ANGOULEME
FRANCE

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 **LEROY SOMER DEI (Les Agriers)**'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.

*** END OF CERTIFICATE ***