



Marine & Offshore

Certificate number: 36554/C0 BV

File number: AP4459

Product code: 2658H

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

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

Nidec Leroy Somer EPG Angoulême

ANGOULEME cedex 9 - FRANCE

for the type of product

GENERATOR CONTROL AND PROTECTION UNITS

D510C.

Digital voltage regulator

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

EC Code: 31.

FOR information only

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: 13 Sep 2027

For Bureau Veritas Marine & Offshore,

At BV BORDEAUX, on 13 Sep 2022

This certificate was created electronically and is valid without signature

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:

D510C is an automatic voltage regulator for Marine and Offshore application.

1.1 - Product's datas:

Name	Minimum value	Maximum value
Battery power supply	11V	30V
Alternator frequency	10Hz	100Hz
Mains frequency	10Hz	100Hz
Single-phase mains voltage	50V	530V
Mains voltage ratio	1	100
Excitation current	0A	6A
Max. excitation current	0A	15A/10s
Single-phase alternator voltage	0V	530V
Three-phase alternator voltage	0V	530V
Alternator current input	1A	5A
Alternator I u	0A	5000A
Alternator I v	0A	5000A
Alternator I w	0A	5000A

1.2 - Software & Firmware:

Firmware version
Up to Firmware 2.60

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

4.6 - Any modification of the hardware, firmware or software having an impact on the product performance or functionality has to be validated with type testing.

4.7 - In accordance with IACS UR E22 and as applicable to programmable devices for computer based systems of Category II or III, for each ship application:

- Ship specific documentation is to be submitted including software documentation and categorization of the computer based system.

- Inspection and testing before installation onboard is to be performed under the surveillance of the Society.

4.8 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev8.

*** END OF CERTIFICATE ***