



Marine & Offshore

Certificate number: 02323/G0 BV

File number: AP 1738

Product code: 4431H

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

SELCO

Roskilde - DENMARK

for the type of product

INTERNAL COMBUSTION ENGINE CONTROL UNITS

Engine Controller Unit, Type M2000C

Emergency Controller Unit, Type M2100

Shutdown Unit, Type M0600

Requirements:

BUREAU VERITAS 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 will expire on: 18 Sep 2023

For Bureau Veritas Marine & Offshore,

At BV FREDERICIA, on 18 Sep 2018,

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:

ENGINE CONTROLLER SYSTEM intended to Control and Protect Diesel and Gas Engines for all purposes (**M2000C**) or Emergency Generators (**M2100**). **M0600** Unit may be used as an extra back-up protection, together with Controllers **M2000C** or **M2100**, or for individual use.

Main Specification of Units:

Engine Controller Unit type: M2000C & Emergency Controller Unit type: M2100
<ul style="list-style-type: none"> - Micro Computer based circuits - 16 contacts for programming functions and delays (DIP switches) - Supply Voltage: 24 V, 12 VDC - 9 shutdown channels and/or 7 alarm channels selectable (M2000C model) - Automatic test function and control of intermittent prelubrication of engine - 10 double LED's - Internal tachometer relay and programmable check of external circuit. - Outputs: 0.15A continuous (peak 0.5A Max) - Siren Relay Contact: 220 VAC/2A, 30 VDC/2A, 30 W - Degree of Protection of Front Side: IP 32 or IP 54 - Firmware Versions: M2000C: 091211, M2100: 191001

Shutdown Unit Type M0600
<ul style="list-style-type: none"> - Containing the SELCO M0700 Universal PC Board - Inputs: OVS, SPA, LOP, RUN, STP - Power Supply: 24V DC - Shutdown Relay: NC/C/NO - Firmware Version: 060208

Note: When used as duplication equipment for machinery safeguards, the power supply is to be separated and independent of other equipment.

2. DOCUMENTS AND DRAWINGS:

According to documents filed under BV N° AP 1738.
Process MAP (FAT) No. 201 Production dated 16-04-2008.

3. TEST REPORTS:

- 3.1 - DELTA test report N° K251196-3 - Rev. 2 dated 2001-01-08 with supplementary test report dated 02.02.2004.
- 3.2 - DELTA test report N° K251196-7 - dated 2001-01-09.
- 3.3 - GL - Type Approval Software ref. SW-E-AK3.doc 19.01.1996.
- 3.4 - DELTA test report N° DANAK-198611 dated 20 December 2006.

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: 33.**
- 4.4 - Units can be mounted directly on the engine.
- 4.5 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zone.
- 4.6 - Where M2000C or M2100 Engine Control Units are used for machinery safeguards these equipments are to be duplicated by M0600 Shutdown Unit or another and different system.
- 4.7 - Only Hardware and 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.
- 4.8 - Factory Acceptance and On-board Tests are to be performed in accordance with requirements for Category III Equipment.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The above products are to be supplied by **SELCO** 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 - **SELCO** 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, **SELCO** has declared to Bureau Veritas the following production site(s):

SELCO
Betonvej 11
DK-4000 Roskilde
DENMARK

6. MARKING OF PRODUCT:

- 6.1 - Trade name
Date of manufacture and serial number,
Equipment type or model identification under which it was type-tested.
- 6.2 - 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.

7. OTHERS:

- 7.1 - It is **SELCO**'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° 02323/F0 BV issued on 25 Jan. 2012 by the Society.

*** END OF CERTIFICATE ***