

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Engine Control and Alarm System**with type designation(s)
M2500 Engine ControllerIssued to
SELCO
Roskilde Sjælland, Denmarkis found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Location class:**

Temperature	B (Tested to -15°C)
Humidity	B
Vibration	B
EMC	A
Enclosure	B (IP54 - front panel only)

Issued at **Høvik** on **2017-04-26**for **DNV GL**This Certificate is valid until **2019-06-30**.DNV GL local station: **Copenhagen**Approval Engineer: **Nils Jarem**

Odd Magne Nesvåg
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Product description

Engine Controller used in Engine Control and Alarm System
Designed with inputs for redundant power supply 2x24V DC (-30%/+30%).
Model/type: M2500
Part number: M2500.0010
Basic software:
- version: 01.01.08
- release: 2012-02-26

Compass safe distances : Standard compass : 46 cm, Steering : 28 cm

Application/Limitation

This system is only to be used as engine control and monitoring system for auxiliary and propulsion marine engines.

1. An independent safety system shall be installed in addition to this control system.
2. Safety actions performed by control system shall be adjusted in line with independent safety system.
3. Safety actions that are in addition to the ones required by DNV Rules, shall have possibilities to be overridden or eliminated, "AUTO RESET" function shall be disabled.

Approval conditions

The following documentation of the actual application is to be submitted (preferably by the maker integrating overall engine automation) for approval in each case:

- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the system block diagram)
- List of controlled and monitored points showing alarms and safety functions (including type, range and threshold)
- Test program for certification

The Type Approval covers hardware and software listed under Product description.

The current software numbers and versions are listed in software installed on the unit. To enter SW revision press Config and og to Setup>About (SW Revision).

Revisions for each software are listed in document "M2500 firmware release history".

The document M2500 Firmware Release History is used for software version control. Major changes should affect first digit. Minor software changes causing change in second or third digit of the software version will require update software changes log (M2500 Firmware Release History) in the type approval certificate in every second year (software changes log shall be submitted together retention survey report). Reference is made to clause for application software control for follow up.

Product certificate.

Each delivery of the application system **is to be certified** according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system, preferably at the engine/system application maker integrating control, monitoring and safety system, before the system is shipped to the yard.

Clause for application software control

When the type approved software is revised (affecting all future deliveries) DNV is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

Job Id: **262.1-009360-4**
Certificate No: **TAA000014R**

Type Approval documentation

Documentation	Revision:
M2500 Engine Controller Installation Manual	2012-04-23
M2500 Engine Controller Configuration Manual	2011-04-08
M2500 Engine Controller Operator Manual	2011-03-08
M2500 firmware release history	2015-02-26

Reports:	Revision	Document no.	Date:
M2500 Function Test	2010-08-19	---	---
EMC/ENV/Compass safe distance	---	DANAK-1910664	2009-10-12
Initial Survey Report, DNV Copenhagen	---	---	2010-09-02

Type approval renewal assessment report for A-14211, DNV GL Copenhagen 2017-03-29.

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.
For the bridge mounted components the 'Compass safe distance' was measured according to section 11.2 of IEC 60945 4th edition (2002).

Marking of product

Manufacturer: Selco Aps
Model name: As listed under Product description
Serial number: Unique for each delivered item

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE