

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Miscellaneous**

with type designation(s)
Changeover Unit COU-01 incl. optional NMEA Expander

Issued to

SYBERG AS
Oslo, Norway

is found to comply with
DNV GL rules for classification – Ships

Application :

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Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Temperature	A
Humidity	A
Vibration	A
EMC	B
Enclosure	A

Issued at **Høvik** on **2020-07-06**

This Certificate is valid until **2025-07-05**.

for **DNV GL**

DNV GL local station: **Oslo Maritime and CAP**

Approval Engineer: **Steinar Kristensen**

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Marta Alonso Pontes
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Job Id: **262.1-005452-5**
Certificate No: **TAA00002R8**

Product description

The Syberg Changeover Unit COU-01 consists of:

Hardware modules:

Unit	Description	Model name
Changeover Unit	Changeover Unit hardware box	COU-01-SA
Option		
NMEA Interface unit	NMEA interface unit, IEC 61162-1/ -2	NMEA Expander

Application/Limitation

- The changeover unit may be installed as a part of a Heading Information System in dual gyro compass installations, ref requirements to Heading Information System in DNV GL Rules for Nautical Safety in Pt.6, Ch.3, Section 3 and Section 5 [Oct 2019]
- The unit may also serve as a changeover unit for other equipment.
- The installation shall be installed according to the manufacturer's documentation.

Type Approval documentation

DNV GL No	Document ID	Rev.	Description
23		01-2020	Report: Syberg, IEC 61162 electrical tests for NMEA EXPANDER
22		B0	Manual: Syberg, NMEA Expander Operation and Installation Manual
18	E14041.00	2014-02-20	Report: Nemko, EMC and environmental test report for NMEA Expander
15		C0	Manual: Syberg, Changeover Unit Operation and Installation Manual
12	0801	01-2008	Report: Syberg, Performance test report for Syberg Change Over Unit
10	2009-3011	01	Report: DNV, EMC and environmental test report for COU-01 Change-Over Unit
6			Drawing: Syberg, Change Over Unit AO

Tests carried out

- Environmental tests: IEC 60945 (2002); Clauses 7.1, 8.2, 8.3.1, 8.4.2, 8.7, 9.3, 10.9 and 11.2
- Interface tests ¹⁾: IEC 61162-1 (2016) and IEC 61162-2 (1998)
- Functional tests: According to DNV GL Rules for NAUT-AW and NAUT-OSV for Heading Information Systems.

Marking of product

The product shall be marked with "Syberg COU-01-SA" and serial number in a visible location.

Periodical assessment

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

The scope of the periodical/renewal assessment is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in <https://approvalfinder.dnvgl.com>

¹⁾ Relevant for NMEA expander module only.