DNV·GL

Certificate No:
A-14010
File No:
848.10
Job Id:
262.1-013977-1

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Engine Telegraph Systems

with type designation(s)
NORISYS LS4

Issued to
NORIS Automation GmbH
ROSTOCK, Germany

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application :

Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**C**

This Certificate is valid until **2018-12-31**.
Issued at **Høvik** on **2014-11-17**

DNV GL local station: **Hamburg**

Approval Engineer: **Nils Jarem**

for **DNV GL**
Digitally Signed By: Sneen, Ståle
Location: DNV GL Høvik, Norway
Signing Date: 2014-11-17, on behalf of

Odd Magne Nesvåg
Head of Section

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Product description

The device is designed as control lever for operator demands on propulsion control systems.

Types

LS4	Basic single lever with integrated processing electronic
LS4-ESS	LS4 type with electrical tracking system
LSN4	Double lever for two demands, handled by one processing electronic
LSN4-ESS	LSN4 type with electrical tracking system
LSD4	Double lever for two demands, handled by separated signal processing
LSD4-ESS	LSD4 type with electrical tracking system
LT4	Basic single lever, rotated 90°, with integrated processing electronic
LT4-ESS	LT4 type with electrical tracking system
LTD4	Double LT4 for two demands, handled by sep. processing electronics
LTD4-ESS	LTD4 type with electrical tracking system

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Data Sheet	DB-NLS4_en V01.00, NORISTAR LS4 Lever System
Manuals	NAR-KD-0111-1-en, Ver. 1.17, NORISYS Control Lever System Manual
Drawings	092.004.03.412.A Dated 2014-03-05
	092.004.03.411.A Dated 2014-03-05
	092.004.03.410.A Dated 2014-02-24
	092.004.03.125.A Dated 2014-03-11
	092.004.03.124.A Dated 2014-03-05
	092.004.03.123.A Dated 2014-02-14
	092.004.03.122.A Dated 2014-02-14
	092.004.03.121.A Dated 2014-02-14
	092.004.03.120.A Dated 2014-02-11
	092.004.03.119.A Dated 2014-02-11
	092.004.03.118.A Dated 2014-02-11
Test report	NAR-PB-0111-1-en Ver 1.07 Type Approval Product Test Report

DNV GL Hamburg initial assessment report dated 2012-10-25.

Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.

Marking of product

The products to be marked with:

- model name
- manufacturer name
- serial number

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

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE