

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Control and Monitoring System

with type designation(s)
NORIMOS 3000

Issued to

Noris Automation GmbH
NÜRNBERG, Germany

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

Application :

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

Temperature	B
Humidity	B
Vibration	B
EMC	B
Enclosure	Required protection according to DNV Rules shall be provided upon installation on board

This Certificate is valid until **2018-05-23**.

Issued at **Hamburg** on **2016-05-24**

for **DNV GL**

DNV GL local station: **Augsburg**

Approval Engineer: **Heinz Scheffler**

Duy Nam Le
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

N3000 - Control and monitoring system consisting of:

DSP	Dialog Slave Panel
DSR	Dialog Slave Rack
IMC	I/O Master Cabinet
ISC	I/O Slave Cabinet
IMP	I/O Master Panel
ISP	I/O Slave Panel
IMR	I/O Master Rack
ISR	I/O Slave Rack
SMP	Signal Master Panel
SSP	Signal Slave Panel
N3000-VMP6	Visualisation Master Panel
N3000-VMP10	Visualisation Master Panel
N2000-DP	Display Panel

Norimos 3000 System Software Version no.:

N3_ALA_1xx,
N3_SLV_1xx,
N3_DSP_1xx

Approval conditions

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

When the type approved software is revised (affecting all future deliveries) DNVGL 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.

The following documentation of the actual application is to be submitted for approval in each case:

- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- Software version used in specific delivery
- System block diagram (showing overall system layout and ECM)
- List of control & monitored points (including alarms, shutdowns, setpoints)
- Test program for certification

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 before the system is shipped to the yard. After the certification the clause for application software control will be in force.

Clause for application software control.

All software modifications made after the certification test and as long as the system is in use onboard, are to be recorded. The records, together with the software version(s) in use are to be available for evaluation at request by DNVGL. Major software changes are to be approved before being installed onboard.

Job Id: **262.1-004928-6**
Certificate No: **TAA00000DR**

Type Approval documentation

Test Reports: Product test report 14.01.2005/11.2006/02.2008; No.: E 3.197; E 4.042; No.: 241499 RP3; No.: 241499 RP4; Test Noris 04.08.2006; No.: 261928 RP3; No.: 261928 RP4; No.: 21203633-001; PB 00.101:2015-12 Version 1.1; No.: 15-306; PB 00.101:2015-11 Version 1.2; No.: 15-312

Documents: Description about hardware changes, doc. no.:

PB 00.101:2013-N3/N, Rev.1.2, dated 2016-05-19.

Product Change Notification Product: N3000-IMC / N (LESS) N3000-ISC / N (LESS), No.: PCN0025, dated 29.04.2013.

System N3000 Cabinet – Version, doc.no.: HG-N3000, Rev. C, 24.05.12.

System N3000 I/O Interface Board, doc. no.: SA646-2, Rev. 1, dated: 05.03.13.

System N3000 Quad Analog Multi-Amplifier, doc. no.: SA647-2, Rev. a, dated: 04.11.11.

System N3000 Slave-CPU Board, doc. no.: SA653-2, Rev. a, dated: 15.11.11.

System N3000 Quad Digital Input / Output, doc. no.: SA655-4, Rev. a, dated: 15.11.11.

System N3000 Quad Analog Output-Amplifier, doc. no.: SA656-2, dated: 15.11.11.

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2015.

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