

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Remote Control System, Propulsion, Thruster and Steering**

with type designation(s)

**Wärtsilä Protouch / Lipstronic 7000, Control Units, Control Stations w. lamps/buttons,
Control Stations w. Displays**

Issued to

**Wärtsilä Norway AS
STORD, Norway**

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Location classes:**

Type	Temperature	Humidity	Vibration	EMC	Enclosure
Control Units	A	B	A	B	B
Control Stations w. lamps/buttons	A	B	A	B	A
Control Stations w. Displays	B	B	A	B	A

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed
by DNV GL.**Issued at **Høvik** on **2018-06-08**This Certificate is valid until **2020-06-07**.for **DNV GL**DNV GL local station: **Stord**Approval Engineer: **Jabber Abbas****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

This approval covers remote control system for propellers and steerable/transverse/retractable thrusters with fixed or controllable pitch:

Wärtsilä Protouch (includes fieldbus com. between units and control stations with displays)

Lipstronic 7000 Advanced (includes fieldbus com. between units).

Lipstronic 7000 Basic (no fieldbus com. included).

Following Type Approved Units are included in the system design:

Propulsion Control Unit	PCU
Gear Safety Unit	GSU
Engine Control Station	ECS
Bridge Control Stations	BCS, ACS, WCS
Bridge Control Unit	BCU (when control stations with displays are supplied)

The Type Approval covers hardware listed under Product description.

Approval conditions

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

- Reference to this Type Approval Certificate and Type Approval Certificates for PLCs.
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- Instrument list
- Layout of control panels
- Description of system and functions
- 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 according to an approved test program before the system is shipped to the yard. After the certification the following clause for application software control will be put into force:

Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV GL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Application/Limitation

When the bridge system to be delivered is the new design with touch screens and redundant communication and power supply arrangement **and** the vessel in which the delivery is to be installed has an additional Class notation that requires redundant/independent remote control (RP/RPS, DYNPOS-AUTR/AUTRO/ER) **then** the design shall include at least two BCU units. The more intensive design assessment supported by Failure Mode and Effect Analyses for these notations may reveal additional requirements for the new bridge system design and maybe additional facilities.

Type Approval documentation

Tests carried out

Applicable tests according to S.f.C. No.2.4 April 2006.

Type test of software was performed 2000-08-22 and 2003-02-05.

Functional Type Test covering new alternative bridge system and control of propulsion and auxiliary thrusters was conducted 2014-06-12 in combination with a certification survey of a system to be delivered to a DNV classed vessel.

Functional Type Test covering new hardware including the gear safety unit was conducted 2018-03-22 in combination with a certification survey of a system to be delivered to a DNV GL classed vessel (D37277).

Job Id: **262.1-003532-5**
Certificate No: **TAA00001SU**

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 renewal of this certificate.

END OF CERTIFICATE