Certificate no.:
TAA00003F0

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Electrical Control System

with type designation(s)
InteliMains 1010 Marine, InteliGen 1000 Marine, InteliVision 5.2 Marine, Inteli DC4/4

issued to
ComAp a.s.
Praha 7, **Czech Republic**

is found to comply with
DNV 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.

Type	Temperature	Humidity	Vibration	EMC	Enclosure
InteliMains 1010 Marine	B	B	B	A	Required protection according to relevant rules shall be provided upon installation on board
InteliGen 1000 Marine	B	B	B	A	Required protection according to relevant rules shall be provided upon installation on board
InteliVision 5.2 Marine	B	B	B	A	B (front), A (rear), required protection according to relevant rules shall be provided upon installation on board
Inteli DC4/4	B	B	B	A	Required protection according to relevant rules shall be provided upon installation on board

Issued at **Hamburg** on **2025-04-22**
This Certificate is valid until **2029-06-20**.
DNV local unit: **Ostrava**

for **DNV**

Approval Engineer: **Jens Dietrich**

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 AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") 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.

Product description

The InteliGen 1000 Marine and InteliMains 1010 Marine controllers are advanced systems designed for flexible control, monitoring, alarm management, and protection. They offer embedded solutions ranging from single energy source control to standard synchronization and load-sharing systems, as well as comprehensive Power Management Systems. These controllers, along with their accessories, can manage any DC or AC energy source connected to a DC or AC bus. The control units are highly versatile, with the ability to be expanded using I/O extension modules, communication modules, and a variety of customizable HMIs, as InteliVision and PC tools such as InteliSCADA. Additional system logic can be configured through the built-in PLC Editor function.
Each control unit comes with dedicated application software tailored for various energy sources, including generators, shaft generators, emergency generators, and battery packs. Additionally, they feature application software customized for specific switchgear topologies such as bus-tie systems, shore connections, and microgrid systems.

InteliGen 1000 Marine
InteliGen 1000 Marine is the most advanced ComAp energy source / gen-set controller for multiple energy source / gen-sets with parallelling operations, with or without connection to the shore or other utility.

InteliMains 1010 Marine
InteliMains 1010 Marine is a relay for mains (shore) protection and helps synchronize energy sources / gen-sets to the mains (shore)/utility for switchgear applications**.**

Inteli DC4/4
Extension Module for DC voltage and current measurement, 2 galvanically isolated input measuring channels.

InteliVision 5.2 Marine
InteliVision 5.2 Marine is a marine-approved 5" remote color display for ComAp controllers. It is designed as an easy-to-use Plug&Play display for monitoring and control of single energy source / gen-set in various applications.

Places of Manufacture

B.E.A.M.S. CZ, spol. s r.o.
Kolejní 2971/1, Brno
Czech Republic

NVision Czech Republic a.s.,
Klášterní 1009, Votice,
CzechRepublic.

Approval conditions

The type approval covers hardware and basic design principles based on Pt.4 Ch.9 (see limitations below). 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 classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate
Each system to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed before the system is installed onboard at the company defined as responsible for the system, typically at the switchboard manufacturer. The product certificate must identify this Type Approval Certificate and the parameter settings for the specific project. After the certification the clause for application software control will be in force.

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

- Reference to this Type Approval Certificate
- System block diagram and topology
- Power supply arrangement (may be part of the System block diagram)
- List of hardware and software modules as identified in this Type Approval Certificate
- Functional description
- List of implemented alarm and protection functions with limits and time delays
- Software versions used in specific delivery
- Test program for the certification test including network storm testing (see below).

Software update notification
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.

Application/Limitation

- The Type Approval is valid for systems made by production facilities listed under Place of Manufacture
- The Type Approval does not cover functions implemented in custom Logic. Any functions implemented therein shall be documented on case-by-case basis.
- The generator protection and power management functions are to be configured as required by the applicable DNV rule set for Electrical Installations. For high-speed vessels category B (ref. Pt.4 Ch.8 Sec.2 [6]) and for ships with additional class notations i.e. DYNPOS(AUTR) or DYNPOS(AUTRO) the system must be configured so as to ensure that the power management functions are active for each busbar section when the bus-tie breaker is open. Also, the communication network between must not impair other busbar section(s).
- In applications with multiple HMIs the system configuration shall ensure prevent concurrent user operations as well as command transfer and indication on each HMI showing which HMI is in command.
- The Ethernet communication has not been tested as required by Pt.4 Ch.9 Sec.4, 3.3. (network load/storm) to show the absence of interference with engine control and safety functions.

Type Approval documentation

Tests carried out

Applicable tests based on DNV CG-0339, 2021.
Functional performance test witnessed 2024-11-28.
Tests based on IEC60255-1 (2010), -26(2013), -27(2014), -127(2010), -151(2010) and -181(2019).

Marking of product

Label showing: Manufacturer name, type designation, electrical ratings, HW-revision. 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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE