Certificate no.:
TAA00003N3

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Personal Computer

with type designation(s)
Panel-PC Series - HMI-7.0, HMI-7.0 SCS, HMI -10.1, HMI-12.1 and Box-PC

issued to
GESAS GmbH, elektronische Systementwicklung, Anwendung und Service
Hockenheim, Baden-Württemberg, Germany

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.

Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**A / IP20 (Box-PC and HMI rear side), B / IP66 (HMI front side)**

Issued at **Høvik** on **2025-11-03**
This Certificate is valid until **2030-11-02**.
DNV local unit: **Augsburg**

for **DNV**

Approval Engineer: **Sonali Marathe**

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 USD 300 000.

Product description

Panel-PC Series - HMI-7.0, HMI-7.0-SCS, HMI -10.1, HMI-12.1 and Box-PC are based on Embedded Linux Operating System and i.MX 8M Plus Quad Core Processor.
Tested and approved for nominal voltage 24V DC.

Name	Description
HMI-7.0	7" integrated TFT and touch Panel Computer
HMI-7.0 SCS	7" integrated TFT and touch Panel Computer for machinery spaces
HMI-10.1	10.1" integrated TFT and touch Panel Computer
HMI-12.1	12.1" integrated TFT and touch Panel Computer
Box-PC	Box-PC, Headless

Compass safe distances:
Standard compass safe distance: 50 cm
Steering compass safe distance: 30 cm

Manufactured by

GESAS GmbH
Pfälzer Ring 18,
68766 Hockenheim, Germany

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 classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate
If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After certification the clause for software control will be put into force.

Software control
All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.
Compass safe distance was measured according to section 11.2 of IEC 60945 4th edition (2002).

Marking of product

The product to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

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