

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Peripheral Equipment**

with type designation(s)

smartPanel TP304-SM, smartPanel TP404-SM, smartPanel TP307-SM, smartPanel TP407-SM, smartPanel TP310-SM, smartPanel TP410-SM

issued to

Yaskawa Europe GmbH
Hattersheim am Main, 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:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
smartPanel TP304-SM	A	B	A	B	B - IP66 (front) / IP20 (rear)
smartPanel TP404-SM	A	B	A	B	B - IP66 (front) / IP20 (rear)
smartPanel TP307-SM	A	B	A	B	B - IP66 (front) / IP20 (rear)
smartPanel TP407-SM	A	B	A	B	B - IP66 (front) / IP20 (rear)
smartPanel TP310-SM	A	B	A	B	B - IP66 (front) / IP20 (rear)
smartPanel TP410-SM	A	B	A	B	B - IP66 (front) / IP20 (rear)

Issued at **Hamburg** on **2025-04-04**

This Certificate is valid until **2027-08-09**.

for **DNV**

DNV local unit: **Augsburg**

Approval Engineer: **Holger Jansen**

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

Model name	Description	Standard compass safe distance	Steering compass safe distance
smartPanel TP404-SM Type: H41-A1A41-0	4.3" TFT color display, resolution 480x272 pixel, 64K colors. Resistive touchscreen, Dimmable LED backlight ARM Cortex A8 1 GHz Operating System: LINUX 1 Ethernet port 1 USB (V2.0) port 1 RS-232/RS-485/RS-422	35 cm	20 cm
smartPanel TP304-SM Type: H41-71A41-0	4.3" TFT color display, resolution 480x272 pixel, 64K colors. Resistive touchscreen, Dimmable LED backlight ARM Cortex A8 1 GHz Operating System: Windows Embedded Compact 7 1 Ethernet port 1 USB (V2.0) port 1 RS-232/RS-485/RS-422	35 cm	20 cm
smartPanel TP407-SM Type: H71-A1A41-0	7" TFT color display, resolution 800 x480 pixel, 64K colors. Resistive touchscreen, Dimmable LED backlight ARM Cortex A8 1 GHz Operating System: LINUX 1 Ethernet port 1 USB (V2.0) port 1 RS-232/RS-485/RS-422	55 cm	35 cm
smartPanel TP307-SM Type: H71-71A41-0	7" TFT color display, resolution 800x480 pixel, 64K colors. Resistive touchscreen, Dimmable LED backlight ARM Cortex A8 1 GHz Operating System: Windows Embedded Compact 7 1 Ethernet port 1 USB (V2.0) port 1 RS-232/RS-485/RS-422	55 cm	35 cm
smartPanel TP410-SM Type: HA1-A1A41-0	10.1" TFT color display, resolution 1024x600 pixel, 64K colors. Resistive touchscreen, Dimmable LED backlight ARM Cortex A8 1 GHz Operating System: LINUX 1 Ethernet port 1 USB (V2.0) port 1 RS-232/RS-485/RS-422	35 cm	25 cm
smartPanel TP310-SM Type: HA1-71A41-0	10.1" TFT color display, resolution 1024x600 pixel, 64K colors. Resistive touchscreen, Dimmable LED backlight ARM Cortex A8 1 GHz Operating System: Windows Embedded Compact 7 1 Ethernet port 1 USB (V2.0) port 1 RS-232/RS-485/RS-422	35 cm	25 cm

Application/Limitation

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.

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 the certification the 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 for evaluation and approval. Major changes in the software are to be approved before being installed.

Type Approval documentation

Tests carried out

Applicable tests according to Class Guidelines DNV-CG-0339, August 2021.

For the bridge mounted components the 'Compass safe distance' was measured according to section 11.2 of IEC 60945 4th edition (2002).

The units have been verified for compliance with EU Mutual Recognition Technical Requirements for "Display Monitors, Video Screens, Terminals" version 0.3, dated 2016-04-01.

EU Mutual Recognition Technical Requirements for Computers and programmable logic controllers (PLC) version 0.3, dated 2016-04-01 have additionally been verified.

Marking of product

Model name and part number: As listed under Product description

Serial number: Unique for each delivered item

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