DNV·GL

Certificate No:
TAA000027Z

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Peripheral Equipment

with type designation(s)
TX705(*)-P3CV01, TX707(*)-P3CV01, TX710(*)-P3CV01, TX715(*)-P3CV01, TX721(*)-P3CV01

Issued to
Hans Turck GmbH & Co. KG
Mülheim an der Ruhr, Nordrhein-Westfalen, Germany

is found to comply with
DNV GL 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 GL.

Type	Temperature	Humidity	Vibration	EMC	Enclosure
TX705(*)-P3CV01	C	B	A	B	C / IP66 (front), IP20 (rear)
TX707(*)-P3CV01	C	B	A	B	C / IP66 (front), IP20 (rear)
TX710(*)-P3CV01	C	B	A	B	C / IP66 (front), IP20 (rear)
TX715(*)-P3CV01	C	B	A	B	C / IP66 (front), IP20 (rear)
TX721(*)-P3CV01	C	B	A	B	C / IP66 (front), IP20 (rear)

Issued at **Hamburg** on **2019-02-22**
This Certificate is valid until **2024-02-21**.
DNV GL local station: **Essen**

Approval Engineer: **Marco Rinkel**

for **DNV GL**

Joannis Papanuskas
Head of Section

Product description

Power supply voltage 24 Vdc

Model name	Description
TX705-P3CV01	- 5” TFT color display, resolution 800x480 pixel, 64K colors. - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 2 Ethernet ports - SD Card slot - 1 Plug-in module slot for system expansion - Standard Compass Safe Distance: Standard: 15 cm, Steering: 10 cm
TX707-P3CV01	- 7” TFT color display, resolution 800x480 pixel, 16M colors. - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 85 cm, Steering: 40 cm
TX710-P3CV01	- 10.1” TFT color display, resolution 1280x800 pixel, 16M colors. - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 115 cm, Steering: 75 cm
TX715-P3CV01	- 15.6” TFT color display, resolution 1366x768 pixel, 16M colors. - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 180 cm, Steering: 130 cm
TX721-P3CV01	- 21.5” TFT color display, resolution 1920x1080 pixel, 16M colors. - Dimmable LED backlight - Projected capacitive touchscreen. True glass design. Multitouch operation - 3 Ethernet ports - SD Card slot - 2 Plug-in module slots for system expansion - Standard Compass Safe Distance: Standard: 220 cm, Steering: 130 cm

MODEL NAME:
Model name can be followed by 0, 1, 2 or 3 characters.

OPTIONAL MODULES	
Module name	Description
TX-CAN	CAN Interface - DB9 CAN connector
TX-IO-XX03	Multifunction I/O Module - 20 Digital Inputs configurable as counter/encoder channels - 12 Digital Outputs - 8 Analog Inputs configurable for voltage, current or temperature measurement - 1 PT100 input for cold junction compensation of thermocouples - 4 Analog Outputs configurable for voltage or current
TX-IO-DX06	Compact I/O Module - 8 Digital Inputs - 6 Digital Outputs - 1 Relay Output

MODULE NAME
Module name can be followed by 1 or 2 or 3 or 4 or 5 characters

Application/Limitation

Application/Limitation
The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNVGL, 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

See ANNEX

Marking of product

Model name and part number: As listed under Product description
Serial number: Unique for each delievered item

Tests carried out

Applicable tests according to Class Guidelines DNVGL-CG-0339, November 2015.
For the bridge mounted components the 'Compass safe distance' was measured according to section 11.2 of IEC 60945 4th edition (2002).

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 typeapproved 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.

The assessment is done in connection with TAA000013Z.

END OF CERTIFICATE

ANNEX

Type Approval documentation
(hidden)

Places of Production
(hidden)