DNV·GL

Certificate No:
TAA00002H6

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Temperature Transmitter

with type designation(s)
MK...

Issued to
Müller Industrie-Elektronik GmbH
Neustadt am Rübenberge, Niedersachsen, 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.

Location classes:

Temperature	**B**
Humidity	**B**
Vibration	**B**
EMC	**B**
Enclosure	**C**

Issued at **Hamburg** on **2019-11-14**

This Certificate is valid until **2024-11-13**.
DNV GL local station: **Essen**

Approval Engineer: **Dariusz Lesniewski**

Digitally Signed By: Rinkel, Marco
for **DNV GL**
Location: Hamburg, on behalf of

Joannis Papanuskas
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.

Job Id: **262.1-031213-1**
Certificate No: **TAA00002H6**

Product description

Programmable compact thermometer (transmitter)
Measuring sensor (standard): 1x Pt100, accuracy class A (DIN EN 60751)
Measuring range: -50...+200°C
Accuracy: 0.1 K or 0.08% (linear temperature transmission behaviour)
Power supply: rated 24V DC (10...35V DC)
Output signal: 4...20mA, 2-wire, analogue
Housing material: stainless steel
Max. length of thermo well: 300mm
Process connection: G1/2"
Electrical connection: M12 plug-in connector (standard)
Degree of protection: IP67
Response time (approximately values, water, Ø 6x0.5mm): z0.5 = 12.0s, z0.9 = 30.9s
Response time (approximately values, water, Ø 6x1.0mm): z0.5 = 7.6s, z0.9 = 22.1s
Configurable via Windows PC-Software: PXU01
Firmware version: 1.xx.xx

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Type Approval documentation

Test Report: paconsult no. 278-03 (24-11-2003)
Test Report: paconsult no. 13-5258 Rev. 1(02-09-2013)
Documentation: GL-File-No. 70.70.4778503, GL-Project-No. 13-070214
Data Sheets: MKTS-GL (Rev. 43-557), M 222 10/2003
Construction Drawings: no. 00010-00-536-01, 00010-00-55-01
Cable data sheets; MIE cable reference list (*.xls)
Type approval assessment report issued at Magdeburg on 2019-07-11

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products 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