



Certificate No:
TAE00004C8

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Temperature Sensor PT 100

with type designation(s)
T20

Issued to

Manfred Jünemann Meß- und Regeltechnik GmbH
Bad Salzuflen, 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.

Issued at **Hamburg** on **2021-10-05**

This Certificate is valid until **2026-10-04**.

for **DNV**

DNV local station: **Hamburg – CMC North/East**

Approval Engineer: **Harald Amberger**

Arne Schaarmann
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.

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.



Form code: TA 251

Revision: 2021-03

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Product description

Temperature Sensor PT 100
Type: T20

Measuring range:-40 °C to 200 °C
Measuring tolerance acc. DIN EN 60 751: class A
Length of thermowell: L 100 ... 525 mm

Mech. connection: G1/2 B

Electrical connection: plug-in / socket

Response time (water): with protection tube: $t_{0.5} = 40 \text{ s}$, $t_{0.9} = 100 \text{ s}$
Response time (air): with protection tube: $t_{0.5} = 40 \text{ s}$, $t_{0.9} = 100 \text{ s}$

Material of protection tube: stainless steel

Application/Limitation

Ambient temperature: 70 °C
Degree of protection: IP 68

Operating instruction of the manufacturer to be observed

Type Approval documentation

Tests carried out

Environmental tests acc. DNVGL-CG-0339

Marking of product

Manufacturer Name - Type designation - Main data.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routine Tests (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and 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