Certificate no.:
TAA00003M5

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Temperature Sensor

with type designation(s)
TSP341-N temperature sensor with integrated transmitter (TTH300(-N)), TSP341-N remote temperature sensor apparatus with Ceramic terminal block, TTF300(-N) Field-mount temperature transmitter

issued to
ABB AG
Minden, Nordrhein-Westfalen, **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
TSP341-N temperature sensor with integrated transmitter (TTH300(-N))	**D**	**B**	**B**	**B**	**C (IP66)**
TSP341-N remote temperature sensor apparatus with Ceramic terminal block	**D**	**B**	**B**	**B**	**C (IP66)**
TTF300(-N) Field-mount temperature transmitter	**D**	**B**	**B**	**B**	**C (IP66)**

Issued at **Hamburg** on **2025-06-25**
This Certificate is valid until **2030-06-24**.
DNV local unit: **Essen**

for **DNV**

Approval Engineer: **Johannes Kindermann**

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

TSP341-N: Non-invasive temperature sensor for surface temperature measurement on metal pipes carrying gas or liquid media with **terminal block** or **integrated temperature transmitter TTH300(-N)**

- **Sensing Elements:** 2x Pt100 (Class A, IEC 60751)
- **Measuring Range:** −40 to 135°C

TTH300(-N)

- **Power Supply:** 24V DC
- **Output Signal:** 4–20 mA + HART® 7 (for configuration only)
- **Display:** Optional LCD indicator (A, AS)
- **Protection:** IP66

TTF300(-N) Field-mount temperature transmitter for remote sensor apparatus

- **Power Supply:** 24V DC
- **Output Signal:** 4–20 mA + HART® 7 (for configuration only)
- **Display:** Optional LCD indicator (B, BS)
- **Protection:** IP66

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.

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/ Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

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.

Manufactured by:

ABB Bulgaria:
Trakya Region Nedyalka Shileva No. 16 4023 Plovdiv Bulgaria

DNV Office address:
12 General Stolipin Street; 9002 Varna Bulgaria

END OF CERTIFICATE