Certificate no.:
TAA00003JB

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Temperature Transmitter

with type designation(s)
MTM4831

issued to
Micro Sensor Co., Ltd.
Baoji, Shaanxi Province, **China**

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.

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

Issued at **Hamburg** on **2025-01-10**
This Certificate is valid until **2031-01-09**.
DNV local unit: **Wuhan NB & CMC**

for **DNV**

Approval Engineer: **Dariusz Lesniewski**

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

Temperature transmitter for temperature measurement in gas or in liquid medium.
Power supply: 24V DC
Output signal: 4-20mA, 4-20mA + HART or 4-20mA + RS485
Sensing element (measuring range): RTD: 1xPt100 (-200°C to 500°C) or 1xPt1000 (-40°C to 200°C)
TC: Ni-Cr-Ni (-40°C to 1200°C)
Accuracy: ±1% FS
Probe rod* / cooling rod: 100mm* to 1000mm / 150mm
Display
Degree of protection: IP67

Application/Limitation

Devices with probe rods longer than 100mm for use only when permanently immersed in liquid medium.

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.

END OF CERTIFICATE