Certificate no.:
TAA00003JS

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Temperature Sensor

with type designation(s)
iTHERM ModuLine TM111, TM131, TM151, iTHERM SurfaceLine TM611

issued to
Endress+Hauser Wetzer GmbH+Co. KG
Nesselwang, Bayern, 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
iTHERM ModuLine TM111, TM131, TM151	D	B	A/B*	B	B/C*
iTHERM SurfaceLine TM611	D	B	A	B	B/C*

*** Application/Limitation to be observed**

Issued at **Hamburg** on **2025-03-07**
This Certificate is valid until **2030-03-06**.
DNV local unit: **Augsburg**

for **DNV**

Approval Engineer: **Holger Jansen**

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

iTHERM ModuLine TM111 - Compact Temperature Sensor

Measuring sensor:	Resistance thermometers (RTD), Thermocouples (TC)
Temperature measuring range:	-200°C to +600°C (RTD), max. 800°C (TC)
Electrical connection:	Terminal block, flying leads, iTEMP TMT82 head transmitter (TAA000027W) or any DNV Type Approved head transmitter from Endress+Hauser (i.e. TMT31)
Process connection(thread):	Thread (≤ ½", ≥M 20), Thermowell
Immersion length:	≤ 200mm; longer fixation every 200mm, only for d≥6mm
Neck length:	≤ 38mm
Housing:	TA30A comfort flip cover; Aluminium TA30R small, screwed cover; 316L blasted TA30H Ex d/XP; Aluminium TA30H Ex d/XP; 316L Without display

iTHERM ModuLine TM131 and TM151 - Compact Temperature Sensor

Measuring sensor:	Resistance thermometers (RTD), Thermocouples (TC)
Temperature measuring range:	-200°C to +600°C (RTD), max. 800°C (TC)
Electrical connection:	Terminal block, flying leads, iTEMP TMT82 head transmitter (TAA000027W) or any DNV Type Approved head transmitter from Endress+Hauser (i.e. TMT31)
Process connection:	Thread (≤ ½", ≥M 20), Flange (≥ DN15), Thermowell
Immersion length:	≤ 200mm, longer fixation every 200mm
Neck length:	≤ 80mm, d≥11mm ≤ 100mm, d≥12mm
Housing:	TA30A comfort flip cover; Aluminium TA30R small, screwed cover; 316L blasted TA30H Ex d/XP; Aluminium(neck length ≤ 47mm Nippel+T=50 or ≤ 35mm Nippel+T=70mm) TA30H Ex d/XP; 316L (neck length ≤ 38mm) Without display

iTHERM SurfaceLine TM611 – Surface Temperature Sensor

Measuring sensor:	Resistance thermometers (RTD), Thermocouples (TC)
Temperature measuring range:	-200°C to +600°C (RTD), max. 800°C (TC)
Electrical connection:	Terminal block / flying leads / iTEMP TMT82 head transmitter (TAA000027W)
Process connection:	Pipe assembly
Neck length:	≤ 55mm (angle 90°); ≤ 43mm (angle <90°)
Housing:	TA30A comfort flip cover; Aluminium TA30R small, screwed cover; 316L blasted Without display

Place of Production

Endress + Hauser Sicestherm S.r.l.,
Via Martin Luther King, 7
20060 Pessano con Bornago (MI), Italy

Endress+Hauser Wetzer (Suzhou) Co. Ltd.
China-Singapore-Suzhou Industry Park (SIP)
31 Jiang-Tian-Li-lu, JiangSu Province
Suzhou 215126, China

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.

DNV type approvals of installed head transmitters are to be observed.

Location classes:

Vibration B*	Measuring sensor:	RTD StrongSens only
	Electrical connection:	Terminal block, flying leads or iTEMP TMT82 head transmitter only
Enclosure C*	For 316L housing only	

Type Approval documentation

Tests carried out

Applicable tests according to DNV Class Guideline CG0339, August 2021.

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number

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