



TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00001JT
Revision No:
1

This is to certify:

That the Temperature Sensor

with type designation(s)
RTD Type 902050

Issued to

JUMO GmbH & Co. KG
Fulda, Hessen, 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.

Temperature	D (125°C)
Humidity	B
Vibration	B
EMC	N/A
Enclosure	B (IP69)

Issued at **Hamburg** on **2023-01-20**

for **DNV**

This Certificate is valid until **2027-12-13**.

DNV local unit: **Augsburg**

Approval Engineer: **Holger Jansen**

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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.

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.



Product description

RTD temperature probe
 Operating temperature range: Socket: -40°C ... +125°C
 Cable: -40°C ... +125°C
 Protection tube: -40°C ... +150°C
 Response time: Water 0.4m/s $t_{0.5} < 2.1s$, $t_{0.9} < 3.9s$
 Measuring element: 1x Pt1000 DIN EN 60751 Kl.B
 Cable: Radox MFH-S B
 Plug: TE Serie FDBA 73H 12-03 PN-K
 Protection tube: Stainless steel 1.4571

Manufactured by

Jumo GmbH & Co. KG, Germany, Fulda

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 RU SHIP Pt. 4 Ch. 9 Sec. 1.

Type Approval documentation

Name	Number	Date
Technical Data and Layout	90205099A01Z001K019 Rev.5	2020-01-16
I2PS Test Report	2017-0179703	2017-09-23
Visual Inspection, Performance Test		
Initial Insulation Resistance Test		
Dry Heat Test		
Insulation Resistance Test after Dry Heat		
Vibration Test		
Insulation Resistance Test after Vibration		
Damp Heat Test		
Insulation Resistance Test after Damp Heat Test		
Cold Test		
Insulation Resistance Test after Cold Test		
I2PS Test Report	2017-0207701	2017-10-25
IP6X Test		
IPX9 Test		
Shock Test		
Jumo Test Report	K/E 90.11410	2017-11-16
Dry Heat 125 °C Test Witnessed		
Type Approval Assessment Report dated 2022-11-16		

Tests carried out

Applicable tests according to Class Guideline DNV-CG-0339, Edition 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



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- 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 this certificate.

END OF CERTIFICATE