

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Test and Calibration Equipment

with type designation(s)
Temperature calibrators TC15 and TC65

Issued to

IKM Instrutek AS
Larvik, Norway

is found to comply with
DNV GL 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 GL.

The instruments are only approved as portable temperature test- and calibration instruments.

Issued at **Høvik** on **2020-12-03**

for **DNV GL**

This Certificate is valid until **2023-06-30**.

DNV GL local station: **Sandefjord**

Approval Engineer: **Ståle Sneen**

Marta Alonso Pontes
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 GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.



Job Id: **262.1-007032-8**
Certificate No: **TAA000018F**
Revision No: **3**

Product description

Temperature calibrator: TC15
Temperature range: -40°C* to 150°C
* Relative to ambient temperature

Temperature calibrator: TC65
Temperature range: 30°C to 650°C

The instruments are delivered with a valid calibration certificate.

Application/Limitation

The instrument is only approved as portable temperature test- and calibration instrument. The calibrator must hold a valid calibration certificate for use in connection with class notation E0.

TC65 may be sensitive to radiated RF disturbance in the range 80 MHz to 1000 MHz. The accuracy of the calibration is not affected by this. If the calibration procedure automatically restarts, the unit should be moved further away from active radio transmitters.

Type Approval documentation

Data Sheet / Sales brochure: TC15: PS00529 Ver. 1-2020
TC65: PS00524 Ver. 1-2020
PS00525 Ver. 1-2020

User's Manual: TC15: PS00526 Ver. 2-2020
TC65: PS00526 Ver. 2-2020

Test Reports: TC15: Nemko report no. E20160.00, dated 2020-11-03
TC65: Nemko report no. E20050.01, dated 2020-07-09

Functional test logs TC15: logTC15_40_3B.xls, dated 2009-07-09
TC65: Endurance24.xls, dated 2009-02-10

Type Approval Assessment Report for TAA000018F, DNV GL Sandefjord 2020-12-03

Tests carried out

Relevant EMC tests according to IEC 61326-1 Ed.1.0, with raised test levels according to class requirements.

24 hours functional test:

- TC15 temperature stability and accuracy tested at 0°C for 24 hours in 40°C environment, against reference instrument
- TC65 temperature stability and accuracy tested at 400°C (*) for 19 hours, against reference instrument

(*) The unit will automatically reduce set point temperature to 25°C if operated above 500°C at stable temperature for more than approximately 1.5 hour

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

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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

A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE