

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Dry Block Temperature Calibrator

with type designation(s)
650 TS, 400 TS,

Issued to

R&D Instrument Services
Chennai, Tamil Nadu, India

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.

Location Class

Type	Temperature	Humidity	Vibration	EMC	Enclosure
650 TS	A	A	A	A	A
400 TS	A	A	A	A	A

Issued at **Hamburg** on **2019-02-21**

This Certificate is valid until **2024-02-20**.

DNV GL local station: **Mumbai NB & CMC**

for **DNV GL**

Approval Engineer: **Didier Girardin**

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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.



Job Id: **262.1-028557-1**
Certificate No: **TAA000025A**

Product description

Temperature calibrator of temperature sensors as thermocouple, RTD, temperature gauges, switches, Transmitters including other most commonly used temperature sensing instruments and devices.

Resolution	0.1°C
Units	°C/°F Switchable
Display	LED Green & Orange
Power supply	230V AC ± 2.5% / 50 Hz, 1.6 KW or 115V AC ± 2.5% / 60 Hz, 1.2 KW
Accuracy	±1.0°C for 650 TS & ±0.6°C for 400 TS
Radial Uniformity	@50°C ± 0.05°C / @ 50°C ± 0.05°C @650°C ± 0.1°C / @ 400°C ± 0.1°C
Weight (approved)	5.8 kg (650 TS), 4.4 kg (400 TS)
Ingress Protection	IP20

Place of manufacture

No.5, Natesan Nagar Behind HP Petrol Pump
Alapakkam
Chennai 600116
India

Application/Limitation

The Type Approval covers hardware listed under Product description.

The instruments are only approved as portable test instruments.

The Type Approval is only valid for units with valid calibration certificate(s). The validity of the calibration is one year after calibration certificate date of issue if no other date is set.

Type Approval documentation

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Tests carried out

650 TS - EMC & Electrical Tests according to DNV GL CG-0339:2016, location class A limits.
650 TS - Performance test Range 30 to 650°C
650 TS - 24 Hours at Temp Max Endurance Test
650 TS - Inclination Test

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