DNV·GL

Certificate No:
TAA00000AY

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Temperature Sensor

with type designation(s)
Resistance Thermometer PYR 2PT100 BB15/4Z-DNV
Resistance Thermometer WTH-280-400.WINK-DNV
Resistance Thermometer R254
Thermocouple T354
Resistance Thermometer Pyra 8K
Resistance Thermometer 210

Issued to
H. Heinz Meßwiderstände GmbH
Elgersburg Thüringen, Germany

is found to comply with
DNV GL rules for classification – Ships

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location class:

Temperature	**D**
Humidity	**B**
Vibration	**B**
EMC	**Not relevant**
Enclosure	**Required protection according to DNV GL Rules shall be provided upon installation on board**

This Certificate is valid until **2017-06-30**.

Issued at **Hamburg** on **2016-02-10**

for **DNV GL**

DNV GL local station: **Magdeburg**

Approval Engineer: **Klaus-Peter Schröder**

Duy Nam Le
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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id: **262.1-005021-3**
Certificate No: **TAA00000AY**

Product description

Resistance Thermometers and Thermocouples as specified below:

- Resistance Thermometer **PYR 2PT100 BB15/4Z-DNV** according to DWG No. WOG1k0-0474-1647a
- Resistance Thermometer **WTH-280-400.WINK-DNV** according to DWG No. WOC3k1-0474-1646
- Resistance Thermometer **R254** according to DWG No. WOC1b2-0536-1661
- Thermocouple **T354** according to DWG No. WOC1b2-0536-1661
- Resistance Thermometer **Pyra 8K** according to DWG No. W1C1k0-XXXX-3795
- Resistance Thermometer **210** according to DWG No. W1G1k0-0536-4003

No. of sensor elements:	according to drawing
Measuring range:	according to drawing
Insertion length:	according to drawing
Extension length:	according to drawing

Application/Limitation

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 GL RU SHIP Pt. 4 Ch. 9 Sec. 1.
Sensors longer than standard are to be clamped as found required.

Type Approval documentation

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Edition November 2015.

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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE