DNV·GL

Certificate No:
TAA00001RB

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Temperature Sensor

with type designation(s)
5668 224-000, 5668 227-000, 5668 229-000, 5668 250-000, 5668 270-000 - PT 100 Resistance Sensor

Issued to
Pentronic AB
VÄSTERVIK, Sweden

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 classes:

Temperature	**B**
Humidity	**B**
Vibration	**B**
EMC	**N/A**
Enclosure	**Required protection according to relevant rules shall be provided upon installation on board**

Issued at **Høvik** on **2018-02-22**
This Certificate is valid until **2023-04-01**.
DNV GL local station: **Stockholm**

Approval Engineer: **Nils Jarem**

for **DNV GL**

Odd Magne Nesvåg
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.

Product description

Platinum Resistance Temperature Sensors as listed below.
The working principle is a measurement of a metal changes with temperature, where the measuring element is a platinum resistor. Measuring current: 0.1 … 1.0 mA.

Sensor type no.	Measuring principle	Range	Thermowell Type no.
5668 224-000	Platinum resistance	0°C - 150°C	En-5668265-000
5668 227-000	Platinum resistance	0°C - 150°C	En-5668267-000
5668 229-000	Platinum resistance	0°C - 150°C	En-5668267-000
5668 250-000	Platinum resistance	0°C - 150°C	En-5668265-000
5668 270-000	Platinum resistance	0°C - 150°C	En-5668265-000

Place of manufacture

Pentronic AB, Bergsliden 1, SE-593 96 Västervik

Pentronic AB, Traktorvägen 4, SE-593 62 Västervik

Approval conditions

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 rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Application/Limitation

Thermowells to be used as required by DNV GL Rules.

Type Approval documentation

Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.
Applicable tests according to IEC 60751 for PT-100.

Marking of product

The products to be marked with:
- manufacturer name
- model 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