

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Temperature Sensor**

with type designation(s)

**B, BF, BJ, BL, DMH, GW, NS, PMK, PTE, PTL, PTR, PTV, S - Resistance Thermometers  
DMK, DML, DMV, MK, TDMH - Thermocouples**

Issued to

**Senmatic A/S  
Søndersø, Denmark**

is found to comply with

**DNV GL rules for classification – Ships and offshore units****Application :****Location classes:**

<b>Temperature</b>	<b>D</b>
<b>Humidity</b>	<b>B</b>
<b>Vibration</b>	<b>B</b>
<b>EMC</b>	<b>Not relevant</b>
<b>Enclosure</b>	<b>B, BF, BL, DMH, S, TDMH: Class B BJ, DMK, DML, DMV, GW, MK, NS, PMK, PTE, PTL, PTR, PTV: Required protection of cable end terminal box to be provided upon installation on board</b>

This Certificate is valid until **2020-12-31**.Issued at **Høvik** on **2016-03-10**DNV GL local station: **Fredericia**Approval Engineer: **Nils Jarem**for **DNV GL**

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**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.

Job Id: **262.1-004948-5**  
Certificate No: **TAA000009E**

## Product description

Resistance thermometer models: B, BF, BJ, BL, DMH, GW, NS, PMK, PTE, PTR, PTL, PTV, S  
Thermocouple models: DMK, DML, DMV, MK, TDMH

## Application/Limitation

The type approval covers only options specified in the relevant documentation listed below.  
Thermowells to be used as required by DNV GL Rules.

## Type Approval documentation

Type	Data sheet/Drawing
B	Data sheet Version: V2.5 / Drw: 700-0001-06, 700-0002-07, 700-0023-06, 700-0027-07
BF	Data sheet Version: V2.6 / Drw: 700-0003-13
BJ	Data sheet Version: V2.1 / Drw: 700-0029-03
BL	Data sheet Version: V2.3 / Drw: 700-0020-03
DMH	Data sheet Version: V2.1 / Drw: 700-0028-05
DMK	Data sheet Version: V2.1 / Drw: 700-0086-02
DML	Data sheet Version: V2.1 / Drw: 700-0039-01
DMV	Data sheet Version: V2.1 / Drw: 700-0038-01
GW	Data sheet Version: V2.1 / Drw: 700-0033-01
MK	Data sheet Version: V2.1 / Drw: 700-0103-04
NS	Data sheet Version: V2.3 / Drw: 302-745-12, 302-747-15, 302-748-15, 302-749-14, 302-750-15, 302-751-00, 302-755-01
PMK	Data sheet Version: V2.2 / Drw: 700-0035-01, 700-0036-02, 700-0037-07
PTE	Data sheet Version: V2.4 / Drw: 700-0031-03, 700-1110-05, 700-1111-04, 700-1112-04
PTL	Data sheet Version: V2.2 / Drw: 302-308-05
PTR	Data sheet Version: V3.2 / Drw: 700-0011-11, 700-0012-05
PTV	Data sheet Version: V2.4 / Drw: 700-0013-03, 700-0014-02, 700-0090-00, 700-0119-02, 700-0120-02
S	Data sheet Version: V2.3 / Drw: 700-0050-06
TDMH	Data sheet Version: V2.1 / Drw: 700-0048-07
Test report:	DANAK-193119 dated 1997-02-21, EC 258122 dated 1980-09-24, DANAK-1910531 dated 2009-06-04, DANAK-195557 dated 2001-06-08.

Type approval periodical assessment report for A-12639, DNV GL Frederica 2016-01-08.

## Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2015, including Extreme vibration test done for type DMV, MK, PMK, DMK, DML and TDMH.

## Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number

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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

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE