



Marine &amp; Offshore

Certificate number: 13362/D0 BV

File number: AP 3547

Product code: 3812H

*This certificate is not valid when presented without the full attached schedule composed of 7 sections*

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## TYPE APPROVAL CERTIFICATE

*This certificate is issued to*

**SENMATIC A/S**

Søndersø - DENMARK

*for the type of product*

**TEMPERATURE SENSORS / PROBES / TRANSDUCERS**

Resistance Thermometer, Type: B, BF, BJ, BL, DMH, GW, NS, PMK, PTE, S.

Thermocouple, Type: TDMH, DMK, DML, DMV, MK.

**Requirements:**

BUREAU VERITAS Rules for the Classification of Steel Ships.

*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 20 Jun 2024**

**For Bureau Veritas Marine & Offshore,**

At BV FREDERICIA, on 20 Jun 2019,

Jesper Jensen



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site [www.veristar.com](http://www.veristar.com). Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

- Product model or type designation :

**Resistance Thermometer, Type: B, BF, BJ, BL, DMH, GW, NS, PMK, PTE, S, MNS.  
Thermocouple, Type: TDMH, DMK, DML, MK.**

- Product description:

TEMPERATURE SENSORS - Resistance thermometers or Thermocouples as listed in table below.

Type	Sensing element	Mechanical connection	Electrical connection	Degree of protection
<b>B</b>	Resistance thermometer	Threaded protective sheath	Connection head	IP 65
<b>BF</b>	Resistance thermometer	Threaded protective sheath	Connection head	IP 65
<b>BL</b>	Resistance thermometer	None or with flange	Connection head	IP 65
<b>BJ</b>	Resistance thermometer	Bayonet socket	Fixed cable	-
<b>DMH</b>	Resistance thermometer	Threaded protective sheath	Connection head	IP 65
<b>TDMH</b>	Thermocouple	Threaded protective sheath	Connection head	IP 54
<b>DMK</b>	Thermocouple	Compression fitting	Fixed cable	-
<b>DML</b>	Thermocouple	Compression fitting	Fixed cable	-
<b>MNS</b>	Resistance thermometer	Compression fitting	Fixed cable	IP 66
<b>GW</b>	Resistance thermometer	Threaded protective sheath	Fixed cable	-
<b>MK</b>	Thermocouple	Compression fitting	Fixed cable	-
<b>NS</b>	Resistance thermometer	Compression fitting	Fixed cable	-
<b>PMK</b>	Resistance thermometer	Compression fitting	Fixed cable	-
<b>PTE</b>	Resistance thermometer	Without	Fixed cable	-
<b>S</b>	Resistance thermometer	Threaded protective sheath	Angular connector	-

#### Notes:

- Terminal box and protective cover to be provided upon installation onboard.
- All sensors are suitable for installation where severe vibration conditions exist (e.g. Diesel engine, air compressor).
- All approved sensors are single element type.

### 2. DOCUMENTS AND DRAWINGS:

According following documents filed in AP 3547 and :

<b>B:</b>	Drawings 800-B-CS rev. 01
<b>BF:</b>	Drawing 800-BF-CS rev. 01
<b>BL:</b>	Drawing 800-BL-CS rev. 01
<b>BJ:</b>	Drawing 800-BJ-CS rev. 01
<b>DMH:</b>	Drawing 800-DMH-CS rev. 01
<b>TDMH:</b>	Drawing 800-TDMH-CS rev. 01
<b>DMK:</b>	Drawing 800-DMK-CS rev. 01
<b>DML:</b>	Drawing 800-DML-CS rev. 01
<b>MNS:</b>	Drawing 800-MNS-CS rev. 01
<b>GW:</b>	Drawing 800-GW-CS rev. 01
<b>MK:</b>	Drawing 800-MK-CS rev. 01
<b>NS:</b>	Drawing 800-NS-CS rev. 01
<b>PMK:</b>	Drawing 800-PMK-CS rev. 01
<b>PTE:</b>	Drawing 800-PTE-CS rev. 01
<b>S:</b>	Drawing 800-S-CS rev. 01.

### 3. TEST REPORTS:

- DELTA n° KAP250161-2 (DANAK 193119) dated on 21/02/1997.
- DELTA n° K221548-2 (DANAK 195557) dated on 06/06/2001.
- DELTA n° A506146 (DANAK 1910531) dated on 04/06/2009.

**4. APPLICATION / LIMITATION:**

- 4.1 - According to BV Rules for the Classification of Steel Ships.
- 4.2 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
- 4.3 - Sensors Type DMV, MK, PMK, DMK, DML and TDMH can be installed on exhaust manifolds of high speed and medium speed Diesel Engines.
- 4.4 - Sensors are not to be installed in saline atmosphere.
- 4.5 - Sensors are to be installed in thermowell as required by Bureau Veritas Rules.

**5. PRODUCTION SURVEY REQUIREMENTS:**

- 5.1 - The above sensors are to be supplied by **SENMATIC A/S** in compliance with the type described in this certificate.
- 5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.
- 5.3 - **SENMATIC A/S** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.
- 5.4 - For information, **SENMATIC A/S** has declared to Bureau Veritas the following production site(s):

**SENMATIC A/S**  
**Industrivej 8**  
**5471 Sønderød**  
**DENMARK**

**6. MARKING OF PRODUCT:**

- Maker's name or trade mark.
- Serial number of the units
- Equipment type number or model identification under which it was type-tested..

**7. OTHERS:**

- 7.1 - It is **SENMATIC A/S - DENMARK**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
- 7.2 - This certificate supersedes the Type Approval Certificate No. 13362/C1 BV issued on 13/06/2016 by the Society.

\*\*\* END OF CERTIFICATE \*\*\*