

EUROPEAN UNION RECOGNISED ORGANISATION (EU RO) MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

Certificate No:
MRA0000028

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to

Senmatic A/S
Søndersø, Denmark

for

Temperature Gauges/Sensors/Transmitters

with type designation(s)

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

The product is found to comply with

**EU RO Mutual Recognition Technical Requirements for Temperature Gauges and Transmitters
EU RO Mutual Recognition Technical Requirements for Sensors**

Intended service

**Applicable for a ship as defined in Mutual Recognition Provisions Article 10 Regulation on
Common Rules and Standards For Ship Inspection and Survey Organizations.**

Temperature sensors intended for a range of process and electrical connections

Temperature [°C]: -25 to 70
Vibration: See "Other Conditions"
EMC: Not relevant
IP Code: See "Product description"

This is to certify:

that the Product referred to herein has been inspected for the Manufacturer, pursuant to the relevant requirements of the European Union Recognised Organisation Mutual Recognition procedure, required by Article 10.1 of EU Regulation 391/2009, and has been found in accordance with those requirements.

This Certificate is valid until **2024-01-29**.

Issued at **Høvik** on **2019-01-30**

for **DNV GL**

DNV GL local station: **Fredericia**

Approval Engineer: **Nils Jarem**

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Jan Tore Grimsrud
Head of Section

When a product is presented with this EU RO MR Type Approval Certificate for given application, its acceptability with regards to the limitations stated in the certificate conditions defined in 1b, 1c and 1d of the applied Technical Requirement will be evaluated by the EU RO in charge of classing the ship or being in charge of the unit/system certification.
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: **262.4-000155-1**
Certificate No: **MRA0000028**

Product description

B, BF, BL, DMH, PTR	Resistance Thermometers with connection head (IP66, DMH also IP68)
PTV	Resistance Thermometer with wall mount connection box (IP67)
NS	Resistance Thermometer with fixed wires (IP40 for protected mounting)
BJ, GW, PMK, PTE, PTL, MNS	Resistance Thermometers with fixed cable (IP66)
PTL	Resistance Thermometer with fixed cable (IP67)
S	Resistance Thermometer with plug connection (IP65)
TDMH	Thermocouples with connection head (IP66/IP68)
DMK, DML, MK	Thermocouples with fixed cable (IP66)

Manufactured by

Senmatic A/S
Søndersø
Denmark

Application/Limitation

The type approval covers only options specified in the relevant drawings listed below.
Thermowells to be used when required by class rules.

Type Approval documentation

Type	Drawing
B	800-B-CS rev. 01
BF	800-BF-CS rev. 01
BJ	800-BJ-CS rev. 01
BL	800-BL-CS rev. 01
DMH	800-DMH-CS rev. 01
DMK	800-DMK-CS rev. 01
DML	800-DML-CS rev. 01
GW	800-GW-CS rev. 01
MK	800-MK-CS rev. 01
MNS	800-MNS-CS rev. 01
NS	800-NS-CS rev. 01
PMK	800-PMK-CS rev. 01
PTE	800-PTE-CS rev. 01
PTL	800-PTL-CS rev. 01
PTR	800-PTR-CS rev. 01
PTV	800-PTV-CS rev. 01
S	800-S-CS rev. 01
TDMH	800-TDMH-CS rev. 01
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.

EU RO MR type approval PQA scheme initial assessment report, issued at Søndersø on 2019-01-24

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number

Other Conditions

The transmitters have been verified for compliance with EU Mutual Recognition Technical Requirements for Temperature gauges and transmitters version 0.1, dated 2016-04-01 including EU Mutual Recognition Technical Requirements for Sensors version 0.4, dated 2018-07-01.

Environmental test parameters:	Devices	DNV GL location class
Temperature: -25°C ~ +70°C	All	D
Vibration: 10g, 40-2000Hz @600°C	MK, PMK, DMK, DML, TDMH	Extreme
4g	B, BL, S	B
5g -200Hz	BJ, DMH, GW, MK, NS, PMK	B
0.7g	PTL, PTV, PTR	A
EMC:	Not applicable, no act. components.	
Enclosure:	IP: Refer to Product Description	
Salt mist	BJ, DMH, TDMH, DMK, DML, GW, MK, NS, PMK	

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 annually and at renewal of this certificate.

END OF CERTIFICATE