



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

Certificate No:
MRA0000028
Revision No:
1

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

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 **2029-03-04**.

Issued at **Høvik** on **2024-03-05**

DNV local unit: **Denmark CMC**

for **DNV**

Approval Engineer: **Martin Skårerverket**

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Frederik Tore Elter
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: MRTA 201

Revision: 2022-12

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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
 Sønderød
 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

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 0.3, dated 2023-01-01 including EU Mutual Recognition Technical Requirements for Sensors version 0.5, dated 2023-02-01.

Environmental test parameters:	Devices	DNV 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 after annually and at renewal of this certificate.

END OF CERTIFICATE

Generic Statement for EU RO MR Type Approval Certificate

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.

In accordance with Article 10 of Regulation (EC) No 391/2009 of the European Parliament and of the Council of 23 April 2009 "on common rules and standards for ship inspection and survey organizations", the following organizations, recognized by the EU on this date, have agreed on the technical and procedural conditions under which they will mutually recognize this certificate:

- American Bureau of Shipping (ABS);
- Bureau Veritas (BV);
- China Classification Society (CCS);
- Croatian Register of Shipping (CRS);
- DNV;
- Indian Register of Shipping (IRS);
- Korean Register (KR);
- Lloyd's Register Group Ltd. (LR);
- Nippon Kaiji Kyokai General Incorporated Foundation (ClassNK);
- Polish Register of Shipping (PRS);
- RINA Services S.p.A. (RINA).

The scheme for the mutual recognition of class certificates for materials, equipment and components laid down by Article 10(1) of Regulation (EC) No 391/2009 is only enforceable within the Union in respect of ships flying the flag of a Member State. As far as foreign vessels are concerned, the acceptance of relevant certificates remains at the discretion of relevant non-EU flag States in the exercise of their exclusive jurisdiction, notably under the United Nations Convention on the Law of the Sea (UNCLOS). (In accordance with COMMISSION IMPLEMENTING REGULATION (EU) No 1355/2014 amending Regulation (EC) No 391/2009 - recital (25)).