

Type Approval Certificate



[Temperature Sensor]

Initial Approval 19th March, 2012
Manufacturer Kongsberg Maritime AS, Trondheim
Skonnertvegen 1, NO-7053 Ranheim, Norway

Product Description Type : MB, MN Series

“ See Appendix 1 ”

Approval Condition “ See Appendix 1 ”

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 6, Ch. 2, Art. 301 of the Rules for Classification, Steel Ships.

This Certificate is valid until 18th March, 2027

Issued at Busan, Korea on 16th March, 2022



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "<http://e-cert.krs.co.kr>" by using the tracking No(ME22006324800) and certificate No.(CPH04968-AE002).



KOREAN REGISTER

*General Manager of
Marine & Ocean Equipment Team*

- Note :**
1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
 2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
 3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
 4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 16th March, 2022

A. Product Description

1. Product Specification

- 1) MB Series
 - Element : NiCr-NiAl (Type K), Fe-CuNi (Type J)
 - Measuring ranges : 0 ~ 800 °C (Type K)
0 ~ 600 °C (Type J)
- 2) MN Series
 - Element : PT 100, PT 1000, T 802
 - Measuring ranges : - 200 ~ 200 °C (PT 100, PT 1000)
0 ~ 100 °C (T 802)

2. Approved Drawings and Documents

- 1) Drawings
 - Framework drawing No. MB-810/-811/-812/-828/-970,
MN-1397/-3288/-3458/-3469/-3470/-3473
 - Test sample drawing No. MB-158/-235/-236/-237/-1168/-1186,
MN-524/-531/-2682/-1690/-1847/-4004/-4008
 - Framework drawing No. (for both MB- and MN- Series) : MB-814, MN-1397

3. Test Reports, etc.

- 1) Test Reports
 - Nemko No. E10123.01 (2013-04-16), E10179.00 (2010-10-28)
- 2) Guidelines - Temperature sensor standard types No. P-TEMPS/RE Rev.F

B. Approval Condition

1. Application & Limitation

- 1) This approval is granted on the basis of the approved documentation and the test reports (IACS UR E10 Rev.8).
- 2) The manufacturer should inform this Society of all kinds of revisions of the equipment including software. If the changes are recognized to affect functionality of the approved equipment, type test to confirm the reliability of the revised equipment may be performed in the presence of our surveyor.
- 3) Degree of protection shall be complied with Rule Pt.6 Ch.1 Sec.2 201.2. (5).

2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual product certification is not required.

3. Marking

- 1) The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.

4. Others

N/A

< End of Certificate >