



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

In accordance with Article 10.1 of EU Regulation 391/2009

Certificate No:  
**MRA000001C**  
Revision No:  
1

This Certificate is issued to

**Kongsberg Maritime AS Avd Skonnertvegen  
Ranheim, Norway**

for  
**Temperature Gauges/Sensors/Transmitters**

with type designation(s)  
**GN-11 temperature transmitter**

The product is found to comply with  
**EU RO Mutual Recognition Technical Requirements for Temperature Gauges and Transmitters**

Intended service  
**Transmitters intended for a range of process and electrical connections; See product description on page 2.**

**Temperature [°C]: -45°C ~ +125°C**  
**Vibration: ±8.0 mm / 10 g**  
**EMC: All locations including bridge and open deck**  
**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 **2027-11-27**.

Issued at **Høvik** on **2022-11-28**

DNV local unit: **Trondheim**

Approval Engineer: **Ståle Sneen**



for DNV

Digitally Signed By: Elter, Frederik Tore  
Location: DNV Høvik, Norway

**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.





Job Id: 262.4-000099-2  
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## Product description

GN-11 is a single channel temperature transmitter PCB design for RTD and Thermocouple inputs. Output is 4-20 mA. Output ranges and input signal types are configurable by HART protocol over the 4-20 mA output.

GN-11 is delivered in two types of executions:

1. Single channel, circular cast-in Ø44, for installation in sensor heads and junction boxes.
2. Single or dual (2 PCBs) fitted to a mother board in standard housings for DIN rail mounting.

### Technical data:

Power supply	18-36 VDC
Output signal	4-20 mA
Input signals	RTD types Pt100 and Pt1000, Thermocouple types K and J
Ambient Temperature	1. Circular cast-in: -45 to +125°C 2. DIN Rail housing: -40 to +105°C
Vibration	1. Circular cast-in: IEC 60068-2-6. ±8 mm 3-25 Hz, 10 g 25-100 Hz 2. DIN Rail housing: Class B, ±1.6 mm at 2-25 Hz / ±4 g at 25-100 Hz
IP rating	IP20*
Flame retardant	**

\*Required IP grade for an application is to be met by choice of enclosure.

\*\*Requirements to be flame retardant is met by choice of enclosure.

## Manufactured by

Kongsberg Maritime AS  
Ranheim  
Norway

## Application/Limitation

The Type Approval covers hardware listed under type designation.

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

Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification/Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

## Type Approval documentation

- Datasheet GN-11, P-GN11/CE rev. F, dated 2020-04-17
- Technical Report No. 96-1094 rev. 2, dated 1997-10-14
- Technical Report No. 2006-3407 rev. 01, dated 2006-09-08
- Technical Report No. E16194.00 rev. 00, dated 2016-10-27
- Software revision history, GN-11: 426586 revision A

EU RO MR type approval PQA scheme periodical assessment checklist, DNV Trondheim 2022-11-21

## Marking of product

The products to be marked with:

- manufacturer name: KONGSBERG
- model name: e.g. GN-11, GN-100, GN-110, GN-112, GA-222
- unique serial number
- Power supply: 12 - 35 VDC



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### Other conditions

The transmitters have been verified for compliance with EU Mutual Recognition Technical Requirements for Temperature gauges and transmitters version 0.2, dated 2022-01-01 including EU Mutual Recognition Technical Requirements for Sensors version 0.4, dated 2018-07-01.

Applicable tests according to IACS Unified Requirements E10 rev. 7 and rev. 8 have been verified.

Tested software: P1GN11 V1.0.2 dated 2017-04-24.

Environmental test parameters:	DNV location classes.
Temperature: -45°C ~ +125°C	D
Vibration: ±8.0 mm / 10 g	B
Humidity: 95%RH @ 55°C	B
EMC: All locations including bridge and open deck	B
Enclosure: See product description	

### 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



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### **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);
- Russian Maritime Register of Shipping (RS).

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)).