

EU RO MUTUAL RECOGNITION TYPE APPROVAL CERTIFICATE

Certificate No:
MRA000001C

This Certificate is issued to

Kongsberg Maritime AS
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

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

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 Certificate is valid until **2022-11-27**.

Issued at **Høvik** on **2018-01-02**

DNV GL local station: **Trondheim**

Approval Engineer: **Nils Jarem**



for **DNV GL**

Digitally Signed By: Sneen, Ståle

Location: DNV GL Høvik, Norway

on behalf of

Odd Magne Nesvåg

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.



Form code: MRTA 001a

Revision: 2016-12

www.dnvgl.com

Page 1 of 3

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, 433941 rev. A, dated 2017-11-24
- 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 initial assessment report, DNV GL Trondheim 2017-09-15.

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

Job Id: **262.4-000099-1**
Certificate No: **MRA000001C**

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 0.3, dated 2016-04-01.
Tested software: P1GN11 V1.0.2 dated 2017-04-24.

Environmental test parameters:	DNV GL 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