# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
### IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx DNV 22.0039X**



Certificate history:
Issue 0 (2023-07-07)

Status: **Current**

Issue No: 1

Date of Issue: 2025-02-20

Applicant: **KONGSBERG MARITIME AS**
Skonnertvegen 1
7053 Ranheim
**Norway**

Equipment: **RCM-300 is an associated apparatus for power supply and communication for level gauging radar sensors and auxiliary HART pressure and temperature transmitters. The power and RS-485 are for connection to the level gauging radar sensor. The HART circuit for pressure and temperature transmitters. The HCM-300 is a variant of the RCM-300 where the RS-485 input is substituted with a HART input, resulting in a dual HART board. More than one HART transmitter may be connected to the HART circuit so far as the sums of capacitance and inductance of the transmitters and cables are less than or equal to the Co and Lo for the RCM-300/HCM-300.**

Optional accessory:

Type of Protection: **Intrinsic safety**

Marking: [Ex ia Ga] IIC -15°C≤Ta≤+70°C

Um 250VAC

See Annex for intrinsically safety parameters.

Approved for issue on behalf of the IECEx Certification Body: **Asle Kaastad**

Position: **Certification Manager**

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

**DNV Product Assurance AS**
**Veritasveien 1**
**1363 Høvik**
**Norway**

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Certificate No.: **IECEx DNV 22.0039X** 

Date of issue: 2025-02-20 Issue No: 1

Manufacturer: **KONGSBERG MARITIME AS**
Skonnertvegen 1
7053 Ranheim
**Norway**

Manufacturing locations: **KONGSBERG MARITIME AS**
Skonnertvegen 1
7053 Ranheim
**Norway**

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

**STANDARDS** :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

**TEST & ASSESSMENT REPORTS:**
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

NO/DNV/ExTR22.0044/01

Quality Assessment Report:

NO/PRE/QAR18.0016/05

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**EQUIPMENT:**
Equipment and systems covered by this Certificate are as follows:

Associated power barrier, Communication Module

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

1. The separation distance of minimum 50mm between intrinsically and non-intrinsically safe circuits has to be observed for the final installation in a cabinet.
2. The RCM-300, HCM-300 has to be installed in a cabinet with a degree of protection of at least IP20
3. The RS-485 circuit of RCM-300 (X1/p3,p4) has a safety open voltage Uo= 7V with a maximum voltage 5V for load and thermal assessments.

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**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

- New alternative coating is added.
- Minor changes to circuit board specifications.
- Changes in bill of materials (changes are on the primary side of the barrier circuits).
- Minor changes to the pcb layouts.
- Updated and corrected information in control drawing.

**Annex:**

ANNEX to IECEx certificate number_1.pdf

DNV Product Assurance AS
Veritasveien 3
1363 Høvik
Norway

## Annex to certificate: IECEx DNV 22.0039X

### Electrical Safety Data:

RCM.300:

Maximum safe voltage Um: 250V AC

| Power supply, terminals X1 p1 (+10V) - X1 p2 (0V/GND) | | IIB | IIC |
|---|---|---|---|
| Maximum output voltage | Uo: | 12.63VDC | 12.63VDC |
| Maximum output current | Io: | 330mA | 330mA |
| Maximum output power | Po: | 1.92W | 1.92W |
| Maximum external capacitance | Co: | 7.4µF | 1.15µF |
| Maximum external inductance | Lo: | 200µH | 50µH |
| Maximum ratio | Lo/Ro | 74µH/Ω | 18.5µH/Ω |

Note:
The output circuit has a trapezoidal resistive characteristic with voltages $U_Q$: 23.5 V and Uo: 12.63 V

| X1 p3 (RS-485 A-) – X1 p4 (RS-485 B+) | | IIB | IIC |
|---|---|---|---|
| Maximum output voltage | Uo: | 7.0VDC | 7.0VDC |
| Maximum output current | Io: | 68mA | 68mA |
| Maximum output power | Po: | 85mW | 85mW |
| Maximum external capacitance | Co: | 300µF | 15.7µF |
| Maximum external inductance | Lo: | 30mH | 7.5mH |

| X2 p1 (HART+) – X2 p2-p4 (HART- / GND) | | IIB | IIC |
|---|---|---|---|
| Maximum output voltage | Uo: | 25.20VDC | 25.20VDC |
| Maximum output current | Io: | 108mA | 108mA |
| Maximum output power | Po: | 0.68W | 0.68W |
| Maximum external capacitance | Co: | 820nF | 107nF |
| Maximum external inductance | Lo: | 7.2mH | 1.8mH |

HCM-300:

Maximum safe voltage Um: 250V AC

| X1/X2 p1 (HART+) – X1/X2 p2-p4 (HART- / GND) | | IIB | IIC |
|---|---|---|---|
| Maximum output voltage | Uo: | 25.20VDC | 25.20VDC |
| Maximum output current | Io: | 108mA | 108mA |
| Maximum output power | Po: | 0.68W | 0.68W |
| Maximum external capacitance | Co: | 820nF | 107nF |
| Maximum external inductance | Lo: | 7.2mH | 1.8mH |