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

Certificate No:
MRA000004F

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to
Vaisala Oyj
Vantaa, **Finland**

for
Sensors

with type designation(s)
Indigo500 Series Transmitters

The product is found to comply with
EU RO Mutual Recognition Technical Requirements for Sensors

Intended service
Universal transmitters to be used with a range of sensors. See product description on page 2.

Temperature [°C]:	**0°C ~ +55°C**
Vibration:	**±1.6mm/4.0g**
EMC:	**All locations including bridge and open deck**
IP Code:	**IP66**

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 **2028-11-05**.

Issued at **Høvik** on **2023-11-06**

DNV local unit: **Finland CMC**

for **DNV**

Approval Engineer: **Tommi Juhani Rifaat**

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.

Product description

Vaisala Indigo500 Series Transmitters are universal transmitters compatible with Vaisala Indigo Probes.
Vaisala Indigo500 Series includes two product models, Indigo510 and Indigo520 Transmitters.

Vaisala Indigo510 is available with Protective extra-low voltage (PELV) power supply: 15…35 V DC, 24 AC +-20%

Vaisala Indigo520 transmitter is available with 3 power supply options:

- Protective extra-low voltage (PELV): 15…35 V DC, 24 AC +-20%
- AC (mains) power version: 100…240 V AC 50/60 Hz
- Power over Ethernet (PoE) version: 50 V DC PoE+, IEEE 802.3at PD

Vaisala Indigo500 Series transmitters are compatible with the following Vaisala Indigo probes: (Probes are not covered by this certificate)

- Humidity and temperature probes: HMP3, HMP4, HMP5, HMP7, HMP8, TMP1
- Dew point probes: DMP5, DMP6, DMP7, DMP8
- Moisture in oil probe: MMP8

Vaisala Indigo520 transmitter can be installed with barometer module BARO-1.

See SW211446 rev. AJ for information on software versions.

Manufactured by

Vaisala Oyj.
Vanha Nurmijärventie 21 01670 Vantaa Finland

Application/Limitation

The Type Approval covers hardware listed under type designation.

1. Applicable for a ship as defined in Mutual Recognition provisions Article 10 Regulation on Common Rules and Standards for Ship Inspection and Survey Organizations
2. Not applicable for a mobile offshore drilling unit (MODU)
3. Not applicable for a fishing vessel

Type Approval documentation

Marking of product

The products to be marked with:
- Manufacturer name
- Model name
- Serial no.

Other conditions

The transmitters have been verified for EU Mutual Recognition Technical Requirements for Sensors version 0.5, dated 2023-02-01.

Environmental test parameters		DNV location classes
Temperature:	5°C ~ +70°C	B
Vibration:	±1.6mm/4.0g	B
Humidity:	95%RH @ 55°C	B
EMC:	All locations including bridge and open deck	B
Enclosure:	IP66 (according to IEC 60529)	B

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

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)).