Certificate No: LR25265159MR
Issue Date: 05/12/2025
Expiry Date: 07/06/2030

European Union Recognised Organisation (EU RO) Mutual Recognition Type Approval Certificate in accordance with Article 10.1 of EU Regulation 391/2009.

This is to certify to the Manufacturer named below, 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. The most demanding and rigorous standard from all EU ROs has been taken as a reference for the development of the Technical Requirement on which present certificate is based.

This certificate is issued to:

Manufacturer	**Kistler Instrumente AG**
Address	Eulachstrasse 22, Winterthur, 8408, Switzerland
Product Type	Sensor Unit
Description	Gas Probe Sensor
Trade Name	6637ABE2Q01
Application	Applicable for ships as defined in Mutual Recognition provisions Article 10 Regulation on Common Rules and Standards for Ship Inspection and Survey Organisations. Not applicable for mobile offshore drilling unit (MODU). Not applicable for fishing vessel. Ratings for application in hazardous areas are to be obtained from the applicable Ex Certificates.
Specified Standard	IACS UR E10 Rev.9, used for the conformity assessment process resulting in the issuance of this certificate. The requirements of EU RO Mutual Recognition Technical Requirements, Tier 1 – Sensors (Version 0.6)

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Ashwinikumar Mhamal

Electrical & Control Technical Manager - Africa, Middle East & India to Lloyd's Register Marine and Offshore India LLP

Units 1702-1704, 17th Floor (Level-13), Building Q2, Aurum Q Parc; Gen 4/1 TTC, Thane-Belapur Road, Ghansoli, Navi Mumbai, 400710, India

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Ratings	Power supply: 18 … 32 VDC	
	Ex II 1G Ex ia IIC T5 Ga	for Sensor
	Ex II (1)G [Ex ia Ga] IIC	for Charge amplifier

Additional Tests

Equipment was type tested for environmental and EMC conditions inline with IACS UR E10 Rev.9 and following conditions:
1) Suitable for installation in the general power distribution zone
2) Low Temperature test at -50°C for 16 hours
3) Dry Heat test at 85°C for 16 hours
4) Vibration Test:
- 2Hz to 25 Hz-amplitude ±3.2mm
- 25Hz to 100 Hz-acceleration ±4g
- Additional sweep from 100 Hz to 2000 Hz- acceleration ±4g. No endurance test was made from 100 Hz to 2000 Hz.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Marine and Offshore India LLP of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document No. TSO/25-040639-E-01 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous Certificate No. LR2004064MR-01 to which this extension should be attached.

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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 GL;*
- *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)).

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