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

Certificate No:
MRA000005S

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to

ifm electronic gmbh

Essen, Nordrhein-Westfalen, **Germany**

for
Level Gauges/Transmitters

with type designation(s)
LR3020, LR7020, LX0024, LX0025, LH0001

The product is found to comply with
EU RO Mutual Recognition Technical Requirements for Level Gauges/Transmitters

Intended service
Level Gauges/transmitters intended for use in control, alarm, monitoring and instrumentation systems subject to classification.

Temperature [°C]:	**-25 to 70ºC**
Vibration:	**±1mm / 0.7g**
EMC:	**All locations including bridge and open deck**
IP Code:	**IP56**

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 **2030-11-30**.

Issued at **Hamburg** on **2025-12-01**

DNV local unit: **Essen**

for **DNV**

Approval Engineer: **Holger Jansen**

Frederik Tore Elter
Head of Section

Product description

Continuous level sensors (guided wave radar)

LX0024

Power supply:	10…30V DC
Total number of outputs:	2
Output signal:	analogue signal; IO-Link
Electrical design:	PNP
Number of digital outputs:	1
Number of analogue outputs:	1
Analogue current output [mA]:	4...20, invertible
Analogue voltage output [V]:	0...10, invertible
Probe length L [mm]:	100...1600
Active range A [mm]:	L-40; (when set to oil and oil-based media: L-60)
Inactive range I1 / I2 [mm]:	30 / 10; (when set to oil and oil-based media: 30 / 30)
Sampling rate [Hz]:	4
Materials:	stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); FKM; PEI
Materials (wetted parts):	stainless steel (1.4305 / 303); probe connection: stainless steel (1.4435 / 316L); PTFE; FKM; Sealing: NBR reinforced fibre
Process connection:	G 3/4 external thread

LX0025

Power supply:	10…30V DC
Total number of outputs:	2
Output signal:	analogue signal; IO-Link
Electrical design:	PNP
Number of digital outputs:	1
Number of analogue outputs:	1
Analogue current output [mA]:	4...20, invertible
Analogue voltage output [V]:	0...10, invertible
Probe length L [mm]:	100...1600
Active range A [mm]:	L-40; (when set to oil and oil based media: L-60)
Inactive range I1 / I2 [mm]:	30 / 10; (when set to oil and oil based media: 30 / 30)
Sampling rate [Hz]:	4
Materials:	stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); FKM; PEI
Materials (wetted parts):	stainless steel (1.4305 / 303); probe connection: stainless steel (1.4435 / 316L); PTFE; FKM; Sealing: NBR reinforced fibre
Process connection:	G 3/4 external thread

LR3020

Power supply:	18…30V DC
Total number of outputs:	2
Output signal:	switching signal; analogue signal; IO-Link
Electrical design:	PNP/NPN
Number of digital outputs:	1
Output function:	normally open / normally closed; (parameterizable)
Analogue current output [mA]:	4...20, invertible
Analogue voltage output [V]:	0...10, invertible
Probe length L [mm]:	100...2000
Active range A [mm]:	L-40; (when set to oil and oil based media: L-60)
Inactive range I1 / I2 [mm]:	30 / 10; (when set to oil and oil based media: 30 / 30)
Sampling rate [Hz]:	4
Materials:	stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); FKM; PEI
Materials (wetted parts):	stainless steel (1.4305 / 303); probe connection: stainless steel (1.4435 / 316L); PTFE; FKM; Sealing: NBR reinforced fibre
Process connection:	G 3/4 external thread

LR7020

Power supply:	18…30V DC
Total number of outputs:	2
Output signal:	switching signal; IO-Link
Electrical design:	PNP/NPN
Number of digital outputs:	2
Output function:	normally open / normally closed; (parameterizable)
Probe length L [mm]:	100...2000

Active range A [mm]:	L-40; (when set to oil and oil-based media: L-60)
Inactive range I1 / I2 [mm]:	30 / 10; (when set to oil and oil-based media: 30 / 30)
Sampling rate [Hz]:	4
Materials:	stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); FKM; PEI
Materials (wetted parts):	stainless steel (1.4305 / 303); probe connection: stainless steel (1.4435 / 316L); PTFE; FKM; Sealing: NBR reinforced fibre
Process connection:	G 3/4 external thread
Protection:	IP 68; IP 69K; (7 days / 1 m water depth / 0.1 bar: IP 68)

LH0001

Power supply:	18…30V DC
Total number of outputs:	1
Analogue current output [mA]:	4...20
Probe length L [mm]:	300
Active range A [mm]:	L-40; (when set to oil and oil-based media: L-60)
Inactive range I1 / I2 [mm]:	30 / 10; (when set to oil and oil-based media: 30 / 30)
Sampling rate [Hz]:	4
Materials:	stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); FKM; PEI
Materials (wetted parts):	stainless steel (1.4305 / 303); probe connection: stainless steel (1.4435 / 316L); PTFE; FKM; Sealing: NBR reinforced fibre
Process connection:	G 3/4 external thread

Manufactured by

ifm prover s.r.l.
Str. Geneva Nr.1
550018 Sibiu, Jud. Sibiu, ROMANIA

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.
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Type Approval documentation

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

Other Conditions

The level transmitter has been verified for compliance with EU Mutual Recognition Technical Requirements for Level gauges / transmitters version 0.3, dated 2025-01-01.

Environmental test parameters:		DNV location classes:
Temperature:	-25 to 70°C	D
Humidity:	95%RH@ 55°C	B
Vibration:	±1mm/0.7g	A
EMC:	All locations including bridge and open deck	B
Enclosure:	IP56 (IP-ratings according to IEC 60529)	C

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)).