



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

Certificate No:
MRA0000044

In accordance with Article 10.1 of EU Regulation 391/2009

This Certificate is issued to

KROHNE Pressure Solutions GmbH
Minden, Nordrhein-Westfalen, Germany

for

Pressure Gauges/Transmitters

with type designation(s)

OPTIBAR DP 7060

The product is found to comply with

EU RO Mutual Recognition Technical Requirements for Pressure Gauges – Transmitters

Intended service

Pressure transmitters with a wide range of process and electrical connections, intended for use in control, alarm, monitoring and instrumentation systems subject to classification.

Temperature [°C]: -25°C to 80°C

Vibration: ±1 mm / 0.7 g

EMC: All locations including bridge and deck zone

IP Code: IP66/67/68 (See approval feature "k" in the model code on page 2 for further details)

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 **2030-06-29**.

Issued at **Høvik** on **2025-06-30**

DNV local unit: **Essen**

for **DNV**

Approval Engineer: **Ståle Sneen**

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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.



Form code: MRTA 201

Revision: 2022-12

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Product description

Differential pressure transmitter with metallic pressure diaphragm.

OPTIBAR DP 7060

VGK74 a b c d e f g h i j k l m n

a	Scope:	A, W, C or others
b	Approval:	M, 0, 6, P
c	Material / Process Fitting / Vent Plugs:	S0 316L; 1/4"-18NPT-F IEC A; UNF7/16; 316L; without SR 316L; 1/4"-18NPT-F IEC A; UNF7/16; 316L; on process axis SD 316L; 1/4"-18NPT-F IEC A; UNF7/16; 316L; on the side A0 316L; Adapter 1/2"-14NPT-F; UNF7/16; 316L; without AR 316L; Adapter 1/2"-14NPT-F; UNF7/16; 316L; on process axis AD 316L; Adapter 1/2"-14NPT-F; UNF7/16; 316L; on the side M0 316L; 1/4"-18NPT-F IEC A; M10; 316L; without MR 316L; 1/4"-18NPT-F IEC A; M10; 316L; on process axis VD 316L; 90°- vertical 1/4"-18NPT-F IEC A; UNF7/16; 316L; on the side D0 Superduplex; 1/4"-18NPT-F IEC A; UNF7/16; 316L; without DR Superduplex; 1/4"-18NPT-F IEC A; UNF7/16; 316L; on process axis H0 C-276; 1/4"-18NPT-F IEC A; UNF7/16; 316L; without HR C-276; 1/4"-18NPT-F IEC A; UNF7/16; 316L; on process axis D1 316L; Diaphragm seal; H-side: capillary; L-side: 1/4"-18NPT DS 316L; Diaphragm seal; H-side: direct; L-side: 1/4"-18NPT D2 316L; Diaphragm seal; H-side: capillary; L-side: capillary DT 316L; Diaphragm seal; H-side: direct; L-side: capillary
d	Diaphragm / Material:	S 316L (1.4435); Silicon oil A 316L (1.4435) + Gold; Silicon oil B 316L (1.4435) + Gold; Halocarbon oil R 316L (1.4435); Halocarbon oil H Hastelloy C-276; Silicon Oil K Hastelloy C-276; Halocarbon oil
e	Sealing Material:	E EPDM F FKM C Copper P PTFE
f	Measuring Range / PN: 1-digit alphanumeric code for pressure range:	10 mbar (1 kPa) / 40 bar (4000 kPa) up to 16 bar (1600 kPa) / 400 bar (40000 kPa)
g	Accuracy class:	M 0.065%, E 0.1%
h	Electronics:	Z 2-wire 4...20mA H 2-wire 4...20mA / HART® A 2-wire 4...20mA / HART® with SIL P Profibus PA
i	Supplementary Electronics:	X without Z Additional current output
j	Housing: ¹⁾	A Aluminium; DIN 1-Chamber D Aluminium; DIN 2-Chamber V 316L; DIN 1-Chamber W 316L; DIN 2-Chamber
k	Housing Type / Protection: ²⁾	1, D*, N**, M, A, S (* IP68 – 0.2 bar, ** IP68 – 1.0 bar)
l	Electrical Connection / Material:	M, S, T, K, U, V, 2, 0, 6, L, D, 1, C, B, F, G, H, W, N, 7, P, 8, Z
m	Display and Adjustment Module: ³⁾	X without A mounted (top) B mounted (side) K mounted (top); Bluetooth L mounted (side); Bluetooth

	F without; Lid with sight glass
n	Additional Certificates: X no, M yes (e.g. EN 10204-3.1; NACE ...)

Notes:

- ¹⁾ Salt mist test has been documented for housing material 316L.
- ²⁾ All housing types comply with IP66/67.
IP68 has additionally been documented for Housing Type / Protection D and N.
- ³⁾ Use of Bluetooth has not been considered in this type approval. See Application/Limitation below.

HW and SW version information can be found in OPTIBAR DP 7060 Handbook R06.

Manufactured by

KROHNE Pressure Solutions GmbH
 Gewerbepark Meißen 14, 32423 Minden, Germany

Application/Limitation

Pressure transmitters for use in control, alarm, monitoring and instrumentation systems subject to classification.

Ex-certification is not covered by this certificate. Application in hazardous area is subject to approval by the classing RO according to relevant rules and Ex-Certification/Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.

The pressure transmitters are available with an optional Bluetooth radio module. EU RO MR has not defined technical requirements for wireless communication, and use of Bluetooth has not been considered in this type approval. Use of Bluetooth will be subject for approval by the classing RO.

The type approval does not cover the different administrations requirements for use of the radio frequency bands. The applied frequency band 2400 to 2483.5 MHz is defined by ITU-R Radio Regulations (2024) as an ISM-band. Any use of the radio frequency band must be in line with the requirements of the administration concerned.

Type Approval documentation

Marking of product

The products to be marked with:

- manufacturer name
- type number
- serial number
- date of manufacture
- power supply ratings
- IP rating

Other conditions

The transmitters have been verified for compliance with EU RO Mutual Recognition Technical Requirements for Pressure Gauges – Transmitters, version 0.3 dated 2024-07-01.

Applicable tests according to IACS Unified Requirements E10 rev. 9 have been verified.

Environmental test parameters:

Temperature: -25°C and 80°C
Vibration: ±1 mm / 0.7 g
Humidity: 95% RH @55°C
EMC: All locations including bridge and deck zone
Enclosure: IP66/67 for all housing types; additionally,
IP66/68(0.2 bar) for "D" and IP66/68(1.0 bar) for "N"
(IP ratings according to IEC 60529)

DNV location classes:

Temperature: D
Vibration: A
Humidity: B
EMC: B
Enclosure: B / C / D

Salt mist test has been documented for housing material 316L

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 the 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)).