

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Level Transmitter**with type designation(s)
LMK 487, DX14B-LMK 487 (Ex-Version)

Issued to

BD SENSORS GmbH
THIERSTEIN, Germanyis found to comply with
DNV GL rules for classification – Ships**Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Location classes:**

Temperature	D
Humidity	B
Vibration	B
EMC	B
Enclosure	D

This Certificate is valid until **2021-12-15**.Issued at **Hamburg** on **2016-12-16**DNV GL local station: **Augsburg**Approval Engineer: **Klaus-Peter Schröder**for **DNV GL**

Duy Nam Le
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.

Product description

Hydrostatic probe with ceramic sensor.

Input pressure range (nominal)	0,1 ... 10bar
Power Supply	24V DC (tested 12 ... 36V DC)
Output signal	4 ... 20mA, 2-wire
Electrical connection	Shielded cable with integrated air tube for atmospheric reference
Material housing	Standard: Stainless steel 1.4404 (316L) Option: Titanium (resistant against sea water)
Cable sheath material	TPE-U
Design	Probe or Screw-in version: G3/4" flush tested (mechanical connections for screw-in probes from G1/4" up to G2" possible on request)
Explosion protection	According certificate IExU15ATEX1066 X

Application/Limitation

The Type Approval covers hardware listed under Product description.

When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL RU SHIP Pt.4 Ch.9 Sec. 1.

Type Approval documentation

Test report BFSV no. 1874/16 (2016-07-01)
Test report BFSV no. 2012/16 (2016-08-19)
Test report MeßTechnik Nord no. 07641.045.16 V1.0 (2016-05-04)
Test report SLG no. 6073-15-GG-15-PB001 (2015-09-22)
Test report BD Sensors Versorgungsspannungseinfluss LMK487 (2016-11-08)
Data sheet LMK 487 (LMK487_E_011216)
Ordering code LMK 487 (2016-04-16)
EC-Type Examination Certificate IExU no. IExU15ATEX1066 X
Drawing no. 36.610.000 (version 07 / 2016-03-30)
Drawing no. 06.615.700 (version 08 / 2014-05-23)
Drawing no. 36.640.K00 (version 05 / 2016-03-31)
Drawing no. 06.615.500 (version 01 / 2016-08-25)
Drawing no. 06.615.520 (version 01 / 2016-08-25)
Drawing no. EV.580.002 (v1.0 / 2013-03-26)
Drawing no. EV.580.004 (v1.0 / 2013-03-26)
Bill of materials ELV98 (v1.0 / 2015-09-02)
Drawing no. EI.680.002 (2014-08-04)
Bill of materials ELI86 (2014-10-29)
Cable according drawing no. 36.400.152/04 (2016-11-21), material no. 1004479
Technical report Flame test according IEC 60332-1-2 (2012-09-12)
Test report CURRENTA no. 10/0806 according EN 50267-2-1:1999 (2010-06-10)
Type Approval Assessment Report (2016-04-18)

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Edition November 2015.

Place of manufacture

BD SENSORS GmbH
BD-Sensors-Straße 1
95199 Thierstein
Germany

Marking of product

The products to be marked with:
- device name

Job Id: **262.1-020928-1**
Certificate No: **TAA00000RM**

- manufacturer name
- serial number.

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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE