

TYPE APPROVAL CERTIFICATE

Certificate No:
TAA00001GM
Revision No:
2

This is to certify:

That the Level Transmitter

with type designation(s)

LMK 457, DX14-LMK 457, LMK 458, DX14A-LMK 458, LMK 458H, DX15A-LMK 458H, EP 500, EP 500-500

Issued to

BD SENSORS GmbH
Thierstein, Germany

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Location classes:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
LMK 457, DX14-LMK 457, LMK 458, DX14A-LMK 458, LMK 458H, DX15A-LMK 458H	D	B	B	B	D
EP 500, EP 500-500	B	B	A	B	-

Issued at **Hamburg** on **2023-02-13**

for **DNV**

This Certificate is valid until **2028-02-12**.

DNV local station: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**

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Joannis Papanuskas
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

Electronic Level Transmitters: LMK 457, LMK 458, LMK 458H, EP 500, EP 500-500
Ex-versions: DX14-LMK 457, DX14A-LMK 458, DX15A-LMK 458H

Place of manufacture

BD SENSORS GmbH
BD-Sensors-Str.1
95199 Thierstein, Germany

BD SENSORS s.r.o.
Hradistska 817
CZ-68708 Buchlovice, Czech Republic

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval, by inclusion in an instrument list, by the manufacturer of the application system in each case. Reference is made to DNV Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems

Application/Limitation

Ex installations to be approved in each case according to the Rules and Ex-Certification / Special Condition for Safe Use listed in valid Ex-certificate(s) issued by a notified/recognized Certification Body.

Type Approval documentation

Data sheets:

LM13715K 457, 457H Hydrostatic level probes for navigation- and offshore applications
LMK 458 Hydrostatic Probe for Marine and Offshore
LMK 458H and DX15A-LMK 458H Hydrostatic HART®-Probe for Marine and Offshore, doc. no.: LMK458H_E_010111
Technical data LMK 457
Operating Manual for LMK 457
DSK511K specification P-SOURCE, dated 2010-08-30
DSK 511Z datasheet No. DSK511Z_11/2008
EP500_E_210711
Assembly and Connection Manual dated 21.06.2004
Operating manual EP500_E_010111
Description for DNV prototype tests of devices DMK 458 and LMK 458 as well as the associated device versions for explosion protected areas DX14A-DMK 458 and DX14A-LMK 458, ver. 1, dated 14.06.2009
Description for the DNV Prototype Testing of DMK 457 KRO and DX19-DMK 457 KRO dated 2010-08-28.

Drawings:

EI.090.002, EI.060.002, EL.460.002, EL.460.012, EL.520.002, EL.631.068
ST.360.002, ST.450.002, ST.470.002, ST.490.002, ST.490.004, ST.670.002, ST.680.002, ST.680.004, ST.680.005,
ST.740.002, 56.603.500, 56.603.520, 56.603.511, 56.603.585, 59.450.030, 59.600.000, 59.605.000, 59.670.000,
59.680.030, 60.600.000, 60.600.002, 60.600.004, 60.600.020, 60.600.202, 60.619.000, 60.615.000, 76.603.000,
76.608.020
EV.180.002, EV.180.004 (ELV58), EV.280.002, EV.280.004 (ELV68)
LMK 458H: 76.657.M00, 76.657.001, 76.657.000, 76.656.M00, 76.656.085, 76.656.001, 76.656.000
ELI25, ELI28, EMV43

Ex-Certificates:

IBExU05ATEX1070X, dated 21.09.2021
IBExU07ATEX1180 X, dated 03.05.2017
IBExU10ATEX1186 X, dated 22.08.2022

Test reports:

EMV 03/ 3210-3 for DMK-457, 04/ 3210-4
EMV 09/8152-1-1; DX14A-DMK458
EMV 09/8152-2-1; DX14A-LMK458
TUV NORD EMC Test Report for DX19 DMK 457-KRO No. 10 / 1068-3 dated 2010-08-26
Paconsult 269-03
Car Synergies, Report No. P05-0030
Test Report No. 07/7047-1 for DX13-DMK 457 dated March 20th, 2007
Test Report No. 07/7047-2 for DX13-DMP 457 dated April 2nd, 2007
Test Report No. 07/7047-3 for DX14-LMK 457 dated March 26th, 2007
Test Report No. 07/7047-4 for DX15-LMK 457H dated April 26th, 2007
Test Report No. 07-1481 dated March 21st, 2007
Test Report No. 07-1590 for LMK457/DMK457 dated October 26th, 2007

Test Report No. 6196/07 for LMK457-GL-HT dated July 20th, 2007
Test Report No. 893.2ISO182/09 for DMP457 dated July 14th, 2009
EMC Test Report No.: 10/1068-1 for DX15A-LMK 458H dated 2010-06-24
EMC Test Report No.: 10/1068-4 for DX19-DMP 457 dated 2010-12-15
EMV Services 09/9036-1 (01.09.09) + 09/9036-2-2 (16.11.09)
BFSV UB 6817/09 (25.08.09/20.01.10)
Test Report: MeßTechnikNord No. 073011.173.21 V1.0, dated 09.09.2021
Type approval renewal assessment report issued at Augsburg on 2022-12-12 / 2023-01-25
Type approval renewal assessment report issued at Katowice on 2023-02-08

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Marking of product

Manufacturer: BD Sensors GmbH
Model name: As listed under Product description
Serial number: Unique for each delivered item

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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE