

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Level Transmitter

with type designation(s)

LMK 457, DX14-LMK 457, LMK 457H, DX15-LMK 457H, 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 GL 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 GL.

Location classes:

Type	Temperature	Humidity	Vibration	EMC	Enclosure
LMK ...	D	B	B	B	D
EP 500, EP 500-500	B	B	A	B	-

Issued at **Hamburg** on **2017-12-12**

for **DNV GL**

This Certificate is valid until **2022-12-11**.

DNV GL 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.



Job Id: **262.1-001960-9**
Certificate No: **TAA00001GM**

Product description

Electronic Level Transmitters: LMK 457, LMK 457H, LMK 458, LMK 458H, EP 500, EP 500-500
Ex versions: DX14-LMK 457, DX15-LMK 457H, 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 GL, 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 GL 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 issued by a notified/recognized Certification Body.

Ex-certification is not covered by this certificate and the following paragraph, which is for information only, is based on information received from the manufacturer, but not verified by DNV GL.

Information on Ex-Certification received from manufacturer – Not verified by DNV GL		
Equipment	Certified	Certificate No.
DX14-LMK 457	⊕ II 1G, II 1/2G or II 2G EEx ia IIC/IIB T4 ⊕ II 1D, II 1/2D or II 2D IP 6X T 85°C	IBExU 05 ATEX 1070X incl. suppl. 1
DX15-LMK 457 H	⊕ II 1GD EEx ia IIB/IIC T4 T 85°C	FTZU 06 ATEX 0018X
DX14A-LMK 458	⊕ II 1G Ex ia IIC T4 T from -20 to +60°C	IBExU 07 ATEX1180X dated 2009-03-11
DX15A-LMK 458H	⊕ II 1G Ex ia IIB T4 ⊕ II 1D Ex iaD 20 T85 °C	IBExU 10 ATEX 1186X dated 2010-12-21

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

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

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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
Operating manual EP500_E_010111

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)
Type approval renewal assessment report issued at Augsburg on 2017-09-28.

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

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 at least every second year and at renewal of this certificate.
END OF CERTIFICATE