

## Safety instructions

# Submersible pressure transmitter model LH-20

GB

DNV TAA0000177



Submersible pressure transmitter model LH-20





### **Installation instruction**

It is not allowed to supply the sensors directly from the ship mains.

It must be connected to controllers with appropriate ship approval.

For sensors variants equipped with cable the installation in cable bunches, trunks, spaces with a higher risk of fire or other critical areas fire stops having at least class B-0 penetration or alternatively by the Classification Society accepted means shall be provided.

Details see e.g. DNV GL Rules for Classification of Ships and components/Chapter 8 Electrical installations/Edition January 2018 in Chapter 3.4: "Fire protection measures", Interpretations of the International Convention for the Safety of Life at Sea (SOLAS), 1974 and its Amendments of the IACS SC10 (Rev 1 1997 & Rev.2 May 2001): Precautions against shock, fire and other hazards of electrical origin.



# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAA0000177**  
Revision No:  
**1**

This is to certify:

That the Pressure Transmitter

with type designation(s)  
LH-20-...

Issued to

**WIKA Alexander Wiegand SE & Co. KG**  
Klingenberg a. Main, 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:

Temperature D  
Humidity B  
Vibration A  
EMC B  
Enclosure D

Issued at **Hamburg** on **2022-04-26**

This Certificate is valid until **2027-07-31**.

DNV local station: **Augsburg**

Approval Engineer: **Dariusz Lesniewski**



for DNV  
Digitally Signed By: Papanuskas, Joannis  
Location: DNV GL SE Hamburg, Germany

**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.



Form code: TA 251

Revision: 2021-03

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Job Id: 262.1-025352-2  
Certificate No: TAA0000177  
Revision No: 1

### Product description

Submersible pressure transmitter with integrated temperature sensor  
Supply voltage (for non-Ex-instruments): 9.6...36V (Un= 24 V DC)  
Ambient temperature (for non-Ex-instruments): with connection cable PUR, FEP: -40...+80°C  
Software version: 1.xx.yy

Code digit: 1 2 - 4 5 - 7...11 - 13...18 - 20 21 - 23 - 25...30 - 32 - 34...36 - 38  
Code: L H - 2 0 - xxxxx - xxxxxx - x x - x - xxxxxx - x - xxxx - x

Code digit:	Code:
1...5	LH-20
7	1-digit alphanumeric code for physical unit / customer specific notes
8	2-digit alphanumeric code for gauge / absolute pressure
9...11	5-digit alphanumeric code for gauge pressure ranges: 0...25 bar, 0...300 psi, 0...2.5 MPa, 0...600 kPa, 0...250 inWC, 0...250 mH <sub>2</sub> O, 0...250 mWs, 0...2500 mbar, 0...250 inH <sub>2</sub> O for abs pressure ranges: 0...25 bar, 0... 300 psi, 0...2500 mbar, 0...600 kPa, 0...2.5 Mpa
13	Cable Material: 'A' PUR, 'B' FEP
14	'M' meter, 'F' feet
15	4-digit alphanumeric code fill in length (in full m resp. Ft. steps)
20	Signal output: 'A' 4...20 mA, 2-wire; 'R' 4...20 mA + HART + PT100
21	Accuracy: 'M' 0.2% of span; 'P' 0.1% of span
23	Housing material: 'S' stainless steel, 'T' titanium
25	1-digit alphanumeric code: with or without resp. national or international Ex – Certifications
26	2-digit alphanumeric code for specification of type of protection
27	2-digit alphanumeric code for specification of atmosphere / Hazardous area
29	'G' ship approval
30	Certificate of potable water conformity: 'Z' without, 'K' KTW, ACS
32	Certificates: 'Z' without, 'K' with test protocol
34	'LS' M14x1 female with protection cap 'LT' flush diaphragm
36	Sealing Sensor: 'K' dual FKM (VP2/A), 'E' dual EPDM (A+P 75.5/KW75F)
38	Additional order details: 'Z' without, 'T' additional Text, '#' additional text missed, please enter again

### 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 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.

Ex-certification is not covered by this certificate. Application in hazardous area 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.

### Application/Limitation

Measures for limitation of the propagation of fire along cable bundles are required (fire stops).

### Type Approval documentation

Technical Description for LH20 "VEGAZW-6-80049, dated 22.04.2022"  
Referenced documents in the document "VEGAZW-6-80049, dated 22.04.2022"  
WIKA Data Sheet PE 81.56 - 03/2018  
Type approval renewal assessment report issued at Augsburg on 2022-03-15

### Tests carried out

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

### Marking of product

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

### Periodical assessment



Job Id: 262.1-025352-2  
Certificate No: TAA0000177  
Revision No: 1

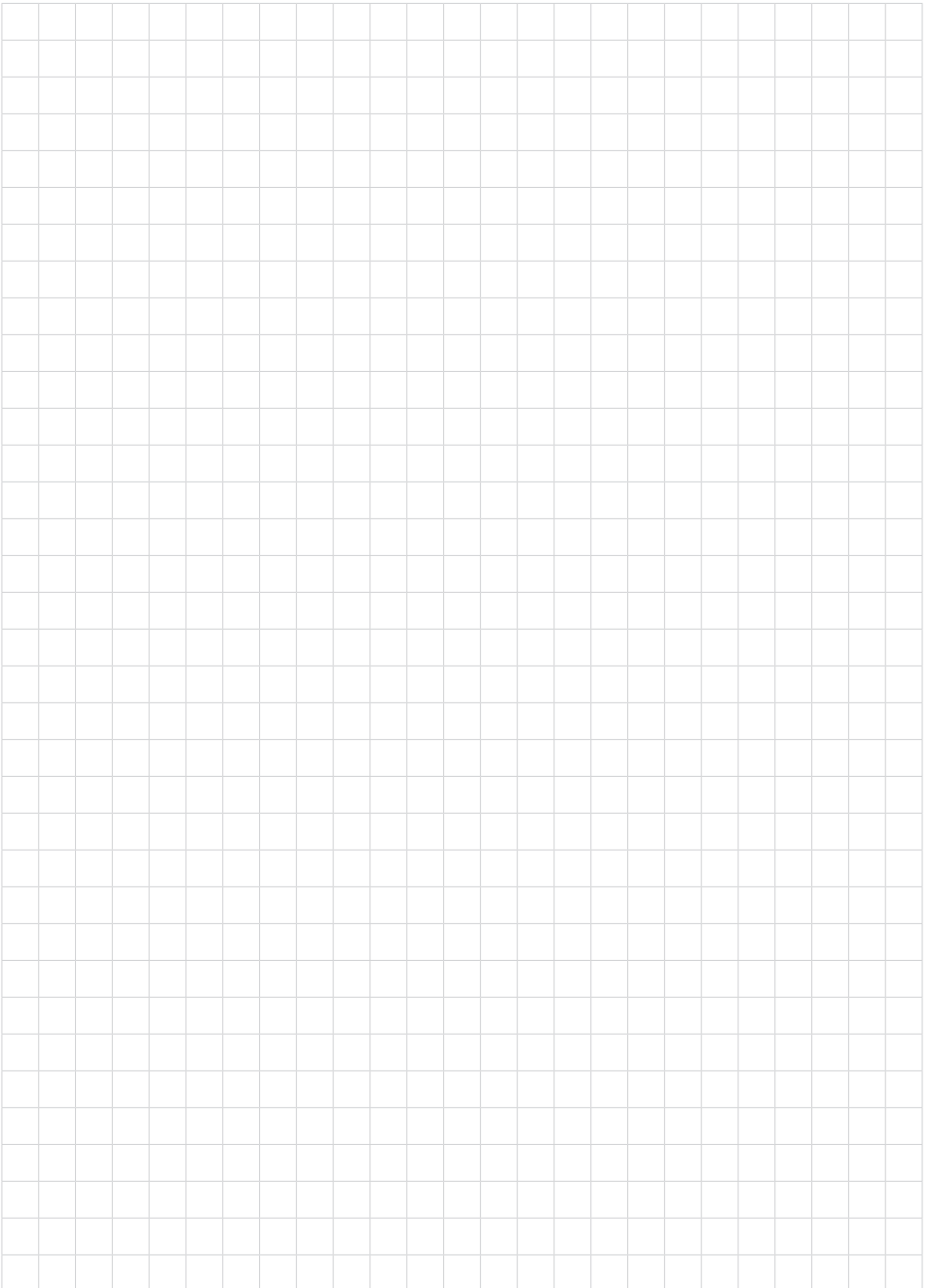
The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

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



Printing date:

All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.



**WIKAI Alexander Wiegand SE & Co. KG**  
Alexander-Wiegand-Straße 30  
63911 Klingenberg  
Germany  
Phone (+49) 9372/132-0  
E-mail: [info@wika.de](mailto:info@wika.de)  
[www.wika.de](http://www.wika.de)

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