



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA00002SW
Revision No:
1

This is to certify:
that the Vibration Transmitter

with type designation(s)
ESW-small-Transmitter Series

issued to
Holthausen Elektronik GmbH
Nettetal, 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	B
EMC	B
Enclosure	C/D

Issued at **Hamburg** on **2024-07-15**

for **DNV**

This Certificate is valid until **2029-07-14**.

DNV local unit: **Essen**

Approval Engineer: **Heinz Scheffler**

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: 2023-09

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Product description

The ESW-small-Transmitter is used for permanent machinery monitoring.

Types:

- ESW- small-transmitter-M-10-**
- ESW- small-transmitter-Ex-M-10-**

- ESW-small M 10-**_E Transmitter
- ESW-small Ex-i M 10-**_E Transmitter
- ESW-small Ex-i M-SIL 10-**_E Transmitter

- ESW-small M 10-**_T_E Transmitter War nicht als Derivat im Test Report genannt auch nicht in der Doku
- ESW-small Ex-i M 10-**_T_E Transmitter
- ESW-small Ex-i M-SIL 10-**_T_E Transmitter

The following technical values are generally possible:

- Measured variables: Vibration acceleration or vibration velocity
- Measuring range (v): 10mm/s, 15mm/s, 20mm/s, 30mm/s, 50mm/s, 100mm/s
- Measuring range (a): 1g, 2g, 5g, 10g, 20g, 50g, 100g
- Signal weighting: Average value calibrated to RMS or peak value
- Lower cut-off frequency 0.2Hz, 0.3Hz, 0.5Hz, 1Hz, 2Hz, 3Hz, 5Hz, 10Hz, 20Hz, 50Hz
- Upper cut-off frequency 10Hz, 20Hz, 50Hz, 100Hz, 200Hz, 300Hz, 500Hz, 900Hz, 1kHz, 1.5kHz, 2kHz, 2.5kHz
- Cable length: 3m, 5m, 7m, 10m, 13m, 16m, 20m, 25m

Explanation**: Basically, all devices are installed in the seawater-proof housing according to type M housing. With the designation 10-**, the asterisks "**" stand for a consecutive and arbitrary device designation. It is used to differentiate between the different device versions.

Rating: 24V DC, 4-20 mA current sink.

Ratings for application in hazardous areas are to be obtained from the applicable Ex Certificate.

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.

Application/Limitation

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.

SIL2 certification is not covered by this certificate and is issued by a notified/recognized Certification Body.

The cables must comply with the requirements of the DNV-RU-SHIP Pt.4 Ch.8.

Type Approval documentation

Datasheet:

- ESW small transmitter_pd_e dated 19.08.24
- ESW@-small-Transmitter Ex-i_M 10-25-TechnDaten-englisch.doc, dated 17.06.2024
- ESW@-small-Transmitter Ex-i_M 10-25_T_E-TechnDaten-englisch, dated 28.06.2024

User Manual:

- ESW_small_transmitter_M_hb_e dated 2015-04-2
- ESW@-small Ex-i M 10-**_T_E Transmitter: ESW_small_transmitter-Ex-i-M_hb_eng.doc, dated 19.08.2024
- ESW@-small Ex-i M 10-**_E Transmitter: ESW_small_transmitter-Ex-i-M_hb_eng.doc, dated 19.08.2024

Test reports:

- U147585E1; U147585E2, E147585E1, E200526E1, E240263E1, U240263E1

Tests carried out

Applicable tests according to DNV CG-0339, August 2021

Marking of product

The products to be marked with:

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

END OF CERTIFICATE