Certificate No:
TAA000032J

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Vibration Transmitter

with type designation(s)
177230 Seismic Transducer/Transmitter

Issued to
Bently Nevada, LLC
MINDEN, NV, USA

is found to comply with
DNV rules for classification – Ships
DNV rules for classification – High speed and light craft
DNV offshore standards

Application :

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

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**A**
Enclosure	**Hermetically Sealed**

Issued at **Houston** on **2021-10-11**
This Certificate is valid until **2026-06-30**.
DNV local station: **Long Beach**

Approval Engineer: **Pasquale Macri**

for **DNV**

Sowkarthika Seetharaman
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
The 177230 transducer/transmitter is a self-contained loop powered device, in which is the sensing device for a system that provides basic vibration detection/measurement for input to a protection system.

Application/Limitation
The Type Approval covers hardware listed under Product description.

This type approval certificate is the renewed revision of type approval certificate TAA000007G.

For hardware listed under Product description, are covered by the Type Approval, a product certificate will not be required.

When the hardware listed under Product description is integrated to a Vibration Monitoring System 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 and DNV Offshore Standards OS-D202.

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.

Type Approval documentation

Tests carried out
Applicable tests according to Standard for Certification No. 2.4, April 2006.

Marking of product
The products to be marked with:
- model name
- manufacturer name
- serial number.
- explosion protection technique identification and certification 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