Certificate no.:
TAA00003J2

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Pressure Transmitter

with type designation(s)
BoT series

issued to
Barksdale, Inc.
Los Angeles, CA, USA

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.

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

Issued at **Hamburg** on **2024-12-20**

This Certificate is valid until **2029-12-05**.
DNV local unit: **Long Beach**

Approval Engineer: **Jens Dietrich**

for **DNV**

Digitally signed by
Elter, Frederik Tore
Location: DNV
Høvik, Norway

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.

Product description

Product Series	BT3 & BT6 Series	BT4 Series	BT5 Series
Supply	BT3: 7 to 33 VDC BT6: 12 to 33 VDC	4.5 to 5.5 VDC	8 to 33 VDC
Output	BT3: 1 to 5 VDC BT6: 0 to 10 VDC Custom Voltage O/p: Between 0 to 11 VDC	0.5 to 4.5 VDC Ratiometric	4 to 20 mA
Response Time	< 3 milliseconds	< 3 milliseconds	< 5 milliseconds
Pressure Range	0 to 9,000 psi (-C Class) 0 to 10,000 psi (-P, -M Class) 0 to 3,000 psi (-W Class)		
Operating Temperature	-40 to 212 °F (-40 to 100 °C)		
Accuracy (BFSL@25degC)	-P, -W Class: ± 0.25% FSO -C, -M Class: ± 0.5% FSO		
Wetted Materials	-17-4 PH SS, NBR (-P class) -316 SS, ceramic, Viton® (-C Class) -316 L stainless steel (-W, -M Class)		
Electrical Connection	-H3: PVC Shielded & jacketed #24 AWG Cable (1 meter) -H4: Mini-DIN 43650 Type “C” -T4: M12 circular connector -T5: Standard DIN 43650 Type 'A" -T6: Aptiv/Delphi Metripack 150 Series -D3: 3-Pin Deutsch Connector - DT04-3P -D4: 4-pin Deutsch Connector - DT04-4P -T8: Bendix connector (PT02A-8-4P) - 4 pin -T9: T4 with European pinning		
Process Connection	BLANK: 1/4" NPT male -P2: 7/16-20 SAE #4 ORB, Male -P3: 7/16-20 UNF male (JIC 37°) -P4: 1/2" NPT, Male -P7: 1/8" NPT male -P9: G1/4 male (gasket seal) -P11: G1/2 male(gasket seal) -P14: 7/16-20 SAE #4 ORB, Female -P16: G1/2 Flush mount -P17: 9/16 - 8 (SAE #6, O-RING) -P18: M12 X 1.5 -P19: G1/4 EN 837 -P20: G1/2 EN 837 -P22: 3/4-16 UNF-2A		

Approval conditions

The Type Approval covers hardware listed under Product description based on DNV Pt.4 Ch.9 Sec.5. 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 classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After certification the clause for software control will be put into force.

Software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Type Approval documentation

Bulletin #R0081-K, 10/24: Data sheet BoT Industrial Transducer, BoT series.
Test reports summary filed under Techdoc item no.6.
Type approval assessment report issued by DNV station US West Coast, 2024-05-23.

Tests carried out

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

Marking of product

Manufacturer name, model number, pressure range, proof pressure, electrical ratings, date code.

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