Certificate no.:
TAA00003G8

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Pressure Sensor

with type designation(s)
BCX01

issued to
CITIZEN FINEDEVICE CO.,LTD. KITAMIMAKI PLANT
Tomi-shi, Nagano, Japan

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	**B**
Humidity	**B**
Vibration	**B**
EMC	**A**
Enclosure	**B / IP67**

Issued at **Høvik** on **2024-10-15**

This Certificate is valid until **2029-10-14**.

for **DNV**

DNV local unit: **Japan CMC**

Approval Engineer: **Sonali Marathe**

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 USD 300 000.

Product description

The Pressure Sensor BCX01 is intended for directly measuring combustion pressure inside cylinders which helps optimize combustion in engines.

Type	Measuring Range	Operation temp. ranges	Supply voltage	Output	Electrical Connection
BCX01	0-300 bar	Sensor up to 350°C Amplifier -20°C to 120°C	16-32 VDC (Rated 24 VDC)	4-20 mA	Plug DIN M12

Place of manufacture

CITIZEN FINEDEVICE CO., LTD. KITAMIMAKI PLANT
353 Yaehara
Tomi-shi Nagano 3890406
Japan

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 classification of ships Pt.4 Ch.9 Control and monitoring systems.

Type Approval documentation

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021 and IACS UR E10 Rev.10.

Marking of product

The products to be marked with:
- manufacturer name
- model 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