Certificate No:
TAA00003AW

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Misc. detector

with type designation(s)
Piezoelectronic Accelerometer PCB-602, 603, 604, 628 Series

Issued to
PCB Piezotronics GmbH
Hückelhoven, Nordrhein-Westfalen, 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	**Required protection according to the Rules shall be provided upon installation on board.**

Issued at **Hamburg** on **2024-02-05**
This Certificate is valid until **2029-02-04**.
DNV local unit: **Essen**

Approval Engineer: **Heinz Scheffler**

for **DNV**

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.

Product description

Piezoelectric Accelerometers Type Variant PCB-602

Type	Description	Data
602D01	Basic Model	Sensitivity (±10 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 3434 µm/sec2
M602D01	Metric thread	Sensitivity (±10 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 3434 µm/sec²
EX602D01	EX Variant	Sensitivity (±10 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 3434 µm/sec²
EXTO602D01	EX Variant / temperature output	Sensitivity (±10 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Temperature Output Range: +2 to +121 °C Broadband Resolution: 3434 µm/sec²
HT602D01	High Temperature Variant	Sensitivity (±10 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to 162 °C Broadband Resolution: 1472 µm/sec²

Piezoelectric Accelerometers Type Variant PCB-603

Type	Description	Data
603C00	Basic Model	Sensitivity (±20 %): 1.02 mV/(m/s²) Measurement Range: ±4905 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 19620 µm/sec²
603C01	Basic Model	Sensitivity (±10 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 3434 µm/sec²
M603C00	Metric thread	Sensitivity (±20 %): 1.02 mV/(m/s²) Measurement Range: ±4905 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 19620 µm/sec2
M603C01	Metric thread	Sensitivity (±10 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 3434 µm/sec²
EX603C00	EX Variant	Sensitivity (±20 %): 1.02 mV/(m/s²) Measurement Range: ±4905 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 19620 µm/sec²
EX603C01	EX Variant	Sensitivity (±20 %): 1.02 mV/(m/s²) Measurement Range: ±4905 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 19620 µm/sec²
EX603C11	EX Variant	Sensitivity (±10 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 3434 µm/sec²

Piezoelectric Accelerometers Type Variant PCB-604

Type	Description	Data
604B91	Basic Model	Sensitivity (±20 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 3434 µm/sec²
604B31	Basic Model	Sensitivity (±20 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 3434 µm/sec²
M604B91	Metric thread	Sensitivity (±20 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 3434 µm/sec²
M604B31	Metric thread	Sensitivity (±20 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 3434 µm/sec²
EX604B31	EX Variant	Sensitivity (±20 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 3434 µm/sec²

Piezoelectric Accelerometers Type Variant PCB-628

Type	Description	Data
628F01	Basic Model	Sensitivity (±5 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 9810 µm/sec²
M628F01	Metric thread	Sensitivity (±5 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 9810 µm/sec²
EX628F01	EX Variant	Sensitivity (±5 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 9810 µm/sec2
EX628F11	EX Variant	Sensitivity (±5 %): 10.2 mV/(m/s²) Measurement Range: ±490 m/s² Temperature Range: -54 to +121 °C Broadband Resolution: 9810 µm/sec²

Application/Limitation

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

Salt mist test: Fulfilled accordance with IEC publication 60068-2-52, Test Kb, test method 1.

Type Approval documentation
Test Reports and Documents: TAA00003AW_Overview_Documents Rev0a

Tests carried out
Applicable tests according to class guideline 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