

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Pressure Sensor**

with type designation(s)

CB102. / CB202. / CE101. / CE201. / CB601. / CB602. / CE611. / CE612. ; GA 250.

Issued to

**Labom Mess- und Regeltechnik GmbH
Hude, Niedersachsen, Germany**

is found to comply with

DNV GL 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 GL.****Temperature B
Humidity B
Vibration A
EMC A
Enclosure *)****Required protection according to the Rules shall be provided upon installation on board.**Issued at **Hamburg** on **2020-05-15**for **DNV GL**This Certificate is valid until **2025-05-14**.DNV GL local station: **Magdeburg**Approval Engineer: **Marco Rinkel****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

CB102. / CB202. / CE101. / CE201.

Measuring Ranges: 0...160 mbar up to 0...400 bar relative
0...0.4 bar up to 0 ... 25 bar absolut
-160...0 mbar up to -1...15 bar relative
Piezoresistive sensor element
Series CB1(2)02.: Internal diaphragm
Series CE1(2)02.: Flush mounted diaphragm
Type of Protection: IP 65; IP 67
Output Signal: 4...20 mA, 0...20 mA or 0...10 V optional

EG Type Approval: TÜV 02 ATEX 1971 X dated 27.06.2011
Explosion Protection: II 1/2 G Ex ia IIC T4/T5/T6 Ga/Gb

CB601. / CB602. / CE611. / CE612.

Measuring Ranges: 0...100 mbar up to 0...400 bar relative
100...0 bar up to - 1...15 bar relative
0...1 bar up to 0...25 bar absolut
1...2,5 bar up to 1...17 bar absolut

Linearity error including hysteresis <+ 0.2 % f.s.
Piezoresistive measuring system
Series CB60.: Internal diaphragm
Series CE61.: Flush mounted diaphragm
Type of Protection: IP 65; IP 67 optional
Output Signal: 4...20 mA, 0...20 mA optional
Process Temperature 80°C or 140 °C

EG Type Approval: TÜV 00 ATEX 1557 X dated 04.04.2000
Explosion Protection: II 2 G Ex ib IIC T6

GA 250.
Resistance Thermometer for additional thermowell
Pt 100 connection in 3- or 4-wire circuitry
Measuring insert 1 x Pt 100 or 2 x Pt 100
Measuring insert interchangeable

EG Type Approval: BVS 04 ATEX E 144 X dated 18.06.2004
Explosion Protection: II 2 G Ex ia IIC T4/T6

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 Excertificate issued by a notified/recognized Certification Body.

Type Approval documentation

See APPENDIX

Job Id: **262.1-032232-1**
Certificate No: **TAA00002MV**

Tests carried out

Applicable tests according to Class Guidelines DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- manufacturer name
- type designation
- 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 covered by assessments in connection with TAA0000245.

END OF CERTIFICATE

Job Id: **262.1-032232-1**
Certificate No: **TAA00002MV**

APPENDIX
Type Approval documentation
(hidden)

Test report :

07-1780 dated 06-03-2008
08-2126 dated 15-09-2008
08-2150 dated 17-09-2008
08-L-00283-01 dated 29-04-2008
F-02536-01001 dated 04-08-2005
F-02536-01002 dated 05-08-2005
F-02536-02001, -02002, -02003 and -03003 dated 01-08-2005
F-02536-0, D4-020 Rev. 1D4, D4-025 Rev. 1D4 and T4-025-1 Rev. 1A4

Data Sheets :

T4-025-1 Rev. 0K8
D4-020-1 Rev. 0K8
D4-025 Rev. 0K8
T4-025-2 Rev. 1D1