

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Level Transmitter**

with type designation(s)

Multipoint Electro Pneumatic Level Transmitter BMS4

Issued to

**API Marine ApS
AALBORG ØST, Denmark**

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.****Location classes:**

Temperature	A
Humidity	B
Vibration	A
EMC	A
Enclosure	A

Issued at **Høvik** on **2017-11-09**This Certificate is valid until **2021-12-31**.DNV GL local station: **Aalborg**for **DNV GL**Approval Engineer: **Ståle Sneen**

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Odd Magne Nesvåg
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

Multipoint Electro Pneumatic Level Transmitter with up to 12 cyclic and sequencing channels.

Order code: Level transmitter A – B – C – D – E

A	1..12	Number of channels
B	L20	Measurement range: max. level 20 m
	L10	Measurement range: max. level 10 m
	L=XXXXX	Measurement range: max. level in mm
	P=XXXXX	Measurement range: max. pressure in MPa
	S=XXXXX	Measurement range: max. density in kg/m ³
C	4	Tubing: For plastic tubes 4x0,75 mm
	6	Tubing: For plastic tubes 6x1 mm
	XXX	Tubing: On request
D	0	Performance type: Without foot
	1	Performance type: On foot
	X	Performance type: On request
E		Additional certification or acceptance

Model name: BMS4
Power supply: 24 VDC
Output: 2x RS-485 (2-wire) with Modbus RTU protocol
Pneumatic source: 2 bar compressed air for basic variant.
Other gases and pressure ranges are available on request.

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, 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 GL 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 DNVGL-CG-0339, November 2016.

Marking of product

- manufacturer;
- product identification;
- housing protection degree;
- measuring range;
- interface specification data;
- identifier of the slave Modbus;
- number of channels;
- parameters of electric power;
- parameters of the working gas;
- serial number;
- year of production.

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)

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Certificate No: **TAA00001GU**

- 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