DNV·GL

Certificate No:
TAA000022Z

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Condition Monitoring System

with type designation(s)
BeCOMS - BCom

Issued to
motcom GmbH
,

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	**B**
EMC	**A**
Enclosure	**Required protection according to DNV GL Rules shall be provided upon installation on board**

Issued at **Hamburg** on **2018-11-20**
This Certificate is valid until **2023-11-19**.
DNV GL local station: **Essen**

Approval Engineer: **Didier Girardin**

for **DNV GL**

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.

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Job Id: **262.1-029317-1**
Certificate No: **TAA000022Z**

Product description

BeCOMS® / BCom bearing condition monitoring system
Consist of motcom Evaluator (Type: BCMEV) and Slide Ring Encoder (Type: BCMSRE)

Type	HW Status	
BCMEV	V3	(Evaluator)
BCM-SRE	2018	(Slide Ring Encoder)
BCM-SRE-L	2018	(Slide Ring Encoder Long Path Through Bearing)

Power Supply: 24V DC +30% / -25%
Operating Current: max. 1.5 A
Sensitivity: Adjustable in 5 steps
2 isolated switchover- relay contacts for Main-Alarm with wire-break resistors
1 isolated switchover- relay contact for Pre-Alarm
1 isolated switchover- relay contact for System Ready

Serial Interface: RS 485 (bidirectional communication)
Communication protocol: Modbus (optional)
Ambient temperature: 0 - 70°C
Inputs: One Slide-Ring-Encoder (BCM-SRE)

Software Version Evaluator:	3.21 B1005	dated 02-01-2018
Software Version Data logger:	2.07	dated 15-07-2016
Software Version Data indicator:	1.23	dated 11-05-2018

Application/Limitation

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 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 the certification the clause for application software control will be put into force.

Clause for application software control
All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation

Software Documentation dated 17.04.2018

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:
- manufacturer name
- model name
- serial number
- power supply ratings

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