



Marine & Offshore

Certificate number: 70354/A0 BV

File number: AP4985

Product code: 4410H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

IMES GmbH

Kaufbeuren - GERMANY

for the type of product

INTERNAL COMBUSTION ENGINE LOCAL MONITORING PANEL

Cylinder pressure monitoring module

CCM

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 27 Oct 2027

For Bureau Veritas Marine & Offshore,

At BV HAMBURG, on 27 Oct 2022,

Dirk Hoepfner

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

The electronic version is available at: <http://www.veristarp.com/veristarnb/jsp/viewPublicPdfTypepec.jsp?id=3jdsy7ju6o>

BV Mod. Ad.E 530 June 2017

This certificate consists of 3 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The CCM electronic module measure cylinder pressure curves on slow or medium speed combustion engines.

Type:	CCM
Function:	Calculation of combustion characteristics from cylinder pressure curves.
Input:	12x Cylinder pressure sensors 3x Pick-up sensors
Communication:	1x CAN-bus; 1x Ethernet
Hardware version:	Rev. 2.2
Firmware version:	Center Controller V4.59 Sensor Controller V4.41
Power supply:	24V DC
Degree of protection:	IP44

2. DOCUMENTS AND DRAWINGS:

- Data sheet CCM_en_10_2022; Hardware manual Rev. 1.x dated xx.xx.2022; Housing 905 206 dated 08.11.17
- CCM.T3001 Rev. 2.2 dated 20.05.2020; CCM_EMV_Filter.T3001 Rev. 1.0 dated 13.10.2020
- CCM Terminal Box Wiring Rev. 1.1 dated 28.04.20
- Software manual Rev. 4.6.0.0 dated 13.04.2021; SW Flow Chart dated 08.Dez.2020; SW History dated 11.03.2022

3. TEST REPORTS:

- Intertek: 2235167KAU002 dated 2019-02-27; 2234679KAU001 dated 2019-01-09
- TQ-Systems: IMS-22001-PR01-E01-01 dated May 19, 2022; CHK+IMS-22001-PR01-S01 dated Aug 1, 2022
- CCM performance test dated 20.10.2022

4. APPLICATION/LIMITATION:

- 4.1 - Bureau Veritas Rules for the Classification of Steel Ships
- 4.2 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**
- 4.3 - Bureau Veritas Environmental Category, **EC Code: 33**
- 4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.
- 4.5 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev8.
- 4.6 - In accordance with IACS UR E22 and as applicable to programmable devices for computer based systems of Category II or III, for each ship application:
 - Ship specific documentation is to be submitted including software documentation and categorization of the computer based system.
 - Inspection and testing before installation onboard is to be performed under the surveillance of the Society.
- 4.7 - Only Hardware and Firmware / Software successfully tested together in compliance with the regulations as referred to in page one, according to the declaration of the manufacturer is covered by this certificate.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The above mentioned products are to be supplied by **IMES GmbH** in compliance with the type described in this certificate.
- 5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.
- 5.3 - **IMES GmbH** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

IMES GmbH
Dr. Herbert Kittel Str. 2
87600 Kaufbeuren
GERMANY

6. MARKING OF PRODUCT:

- Maker's name or trademark
- Equipment type or model identification
- Date of manufacture and/or serial number
- The title and version of each software element included in the installed software system shall be either marked on the module or displayed on command by a visualization unit.

7. OTHERS:

7.1 - It is the responsibility of **IMES GmbH** to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

*** END OF CERTIFICATE ***