



Marine & Offshore

Certificate number: 09029/E1 BV

File number: AP 3106

Product code: 3944H

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

www.veristar.com

TYPE APPROVAL CERTIFICATE

This certificate is issued to

VAF INSTRUMENTS B.V.
DORDRECHT - NETHERLANDS

for the type of product

VISCOSITY MONITORING SYSTEMS

Viscosity Measurement - Control System ViscoSense - ViscoSense VS3/VS3D.

Requirements:

BV Rules for the Classification of Steel Ships.

EC Code: 31

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: 17 Oct 2024

For Bureau Veritas Marine & Offshore,

At BV GRONINGEN, on 09 Nov 2021,

John Mondt



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 SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

- Product model or type designation :
VS3 & VS3D
- Product description:
Viscosity Measurement - Control System

1.1 - ViscoSense VS3 & VS3D comprising:

- sensor VS3 (viscosity and temperature), part no. 0279-0096-4
- sensor VS3D (viscosity, density and temperature), part no. 0279-0110
- housings 0401-0736/0737/0738/0739/0740/0741 (various flange connections)
- interface box, part no. 0279-0111(IP 66), 0279-0112 (IP 66)

2. DOCUMENTS AND DRAWINGS:

- ViscoSense 3/3D Product Bulletin 782
- Viscosense 3 Technical Manual, TIB-775-GB-0418(2)
- Drawing External connection diagram No. 0820-2033 Rev. G dated 12 Mar 2018
- VID03B2H schematics No.:VID03B2H Rev.1.0, dated 14 Feb 2014.
- Viscosense 3D technical manual, Publ.No.: TIB-778-GB-0418(2)
- Drawing Sensor VS3D No.: 0279-0110 Rev.F, dated 6 Jun 2019
- Drawing Pendulum Console VS3D No.: 0379-0143 Rev. D, dated 6 Jun 2019
- Drawing Actuator VS3D No.: 0379-0144 Rev.A, dated 6 Jun 2019
- Drawing Actuator with cap VS3D No.: 0379-0145 Rev.C, dated 7 Jun 2019
- Drawing Welded VS3D No.: 0379-0146 Rev.B, 7 Jun 2019
- SchematicsVID03B4F No.:VID03B4F Rev. 2.0, dated 13 Feb 2014.
- SchematicsVID03B4G No.:VID03B4G Rev. 2.0, dated 13 Feb 2014.

For modification E1 version:

- Power Supply Interfacebox Comparison Rev.A, dated 18-05-2021.
- Analyses Document Rev.B, dated 18-05-2021.
- MFM-15 series Specification, No. MFM-15-SPEC, dated 13-12-2019.
- Drawing Assy interface box VS3D No.: 0279-0111 Rev.O , dated 25-09-2020.
- Drawing interface box VS3 No.:0395-0020 Rev.G, dated 24-09-2020.
- Drawing interface box VS3 No.: 0395-0021 Rev.E, dated 24-09-2020.
- Drawing Cap VS3D No.: 0409-0103 Rev F, dated 25-05-2021.
- Drawing Cap DLC coated VS3D No.: 0409-0107 Rev.B, dated 30-01-2020.
- Drawing Assy interface box VS3 No.: 0279-0112, Rev. I, dated 25-09-2020.

3. TEST REPORTS:

- Test report dated 19.02.1999.
- Test report by VAF Instruments, dated 09.11.1999:
 - . test report MO36-1999.7052, on interface boxes 0379-0108 & 0379-0109, by SHAPE, dated 23 Sep. 1999.
 - . test report 10106618, by Nederlands Meetinstituut, dated 7 Oct 1999.
- Test report by VAF Instruments, dated 02/11/2001:
 - . test report MO1.7055-2001.7068, on sensor 0279-0088 and on interface box 0379-0115, by SHAPE, dated 21 Sep. 2001.
 - . EMC test report 01C00797RPT02.doc by DARE!!, dated 30 Oct. 2001.
- Test report by VAF Instruments, dated 2014:
 - . EMC test report No.:13C01765RPT02 - issued by DARE, dated 19 Feb 2014.
 - . EMC test report No.:2169489.0501-EMC - issued by DEKRA, dated 10 Feb 2014.
 - . Vibration test report No.:M14.001-P14.001 issued by Sebert Trillingstechniek, dated 29 Jan 2014.
 - . Test report No.:0297-0111 issued by VAF, dated 20 Feb 2014.
- Test report by DARE: Climatic test report No.:14C00655RPT01, dated 05 May 2014.
- . IP test report "IPtestsInterfaceboxVS3.pdf", dated 25 April 2014.
- Functional Test report VS3D No. 0279-110, dated 22-Jun-2016.
- Vibration Test report VS3D No. M16.001-P16.001, dated 20-May-2016.
- Electromagnetic Compatibility Test Report of interface box model 0279-0111, Ref 17C00339RPT04, dated 19-Jul-2017.

For modification E1 version:**VAF:**

- Performance Test InterfaceBox, dated 16-09-2021.

Sebert Trillingstechniek B.V.:

- Maritime vibration tests on a VS3D interface Box, No. M21.001-P21.001, dated 06-09-2021.

Kiwa:

- EMC Test Report No. 20210621RPT01, dated 21-06-2021.

- EMC Test Report No. 20210079RPT02, dated 09-07-2021.

- Product Test Report No. 21C00070RPT01, dated 24-08-2021.

4. APPLICATION / LIMITATION:

4.1 - Approval valid for ships intended to be granted with the following additional class notations: **AUT-UMS, AUT-CCS, AUT-PORT and AUT-IMS.**

4.2 - The fitting aboard to be the same as used for the test.

4.3 - BUREAU VERITAS Environmental Category, **EC Code: 31.**

4.4 - The equipment fulfils the EMC requirements for installation in General Power Distribution Zones.

4.5 - The equipment, once installed on board ship, is to be tested in accordance with the above referred Regulations under the supervision of a Society's Surveyor.

4.6 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev7.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above products are to be supplied by **VAF Instruments B.V.** 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 - **VAF Instruments B.V.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - **VAF Instruments B.V.** has declared to Bureau Veritas the following production site(s):

VAF Instruments B.V.
Vierlinghstraat 24
3316 EL Dordrecht
The NETHERLANDS

6. MARKING OF PRODUCT:

- Maker's name or trade mark,

- Serial number of the units,

- Equipment type number or model identification under which it was type-tested.

7. OTHERS:

7.1 - It is **VAF Instruments B.V.**'s responsibility 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.

7.2 - This certificate supersedes the Type Approval Certificate No. 09029/E0 BV issued on 17 Oct 2019 by the Society.

*** END OF CERTIFICATE ***