



CERTIFICATE NUMBER  
EFFECTIVE DATE  
EXPIRY DATE  
ABS TECHNICAL OFFICE

21-2172125-PDA  
21-Oct-2021  
20-Oct-2026  
London Engineering Department

## CERTIFICATE OF Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

### **VAF INSTRUMENTS**

located at

**VIERLINGHSTRAAT 24, 3316 EL DORDRECHT, Netherlands**

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

**Product:** Viscosity and Density Controls and Measurement Systems  
**Model:** VISCONSENSE VS3 AND VISCONSENSE VS3D  
**Endorsements:**  
**Tier:** 3 - Type Approved, unit certification not required

This Product Design Assessment (PDA) Certificate remains valid until 20/Oct/2026 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

*S Balakan*

Serkan Balakan, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

## VAF INSTRUMENTS

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**Tier: 3 - Type Approved, unit certification not required**

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**Product:** Viscosity and Density Controls and Measurement Systems

**Model:** VISCOSENSE VS3 AND VISCOSENSE VS3D

**Endorsements:**

### Intended Service:

For use on ABS Classed Vessels and Offshore Facilities in accordance with the listed ABS Rules and International Standards.

### Description:

Viscosity and Temperature measurement system consists of sensors pendulum type 0279-0096 VS3, 0279-0110 VS3D, housing type 0401-0736/0737/0738/0739/0740/0741, interface boxes 0279-0111 VS3D and 0279-0112 VS3. The sensor consists of a stainless steel driver/sensor head, attached to the base plate by means of a tubular torsion spring. In the head, one pair of piezo elements actuates the pendulum at its torsional resonance frequency, while another pair detects the actual movement of the head. The interface box is an electronic unit, processing the signals to and from the sensor. It provides 4..20 mA signals for remote read-out of viscosity, density and temperature

### Rating:

Power supply: 115 V AC +/- 20% or 230 V AC +/- 20%

Output signal (Viscosity, Temperature, Density): 4 - 20 mA

Operating temperature: 0-200 °C

Max. Pressure rating: 40 Bar

Sensor material: Stainless steel 316

Ingress Protection: IP65 (sensor), IP 66 (electronic box)

### Service Restriction:

Unit Certification is not required for this product. If the manufacturer or purchaser request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.

### Comments:

The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

### Notes/Drawing/Documentation:

Drawing No. 0820-1069, Dim Drawing interface box VS3, Revision: H, Pages: 1

Drawing No. 0820-1070, Dim drawing interface box VS3D, Revision: G, Pages: 1

Drawing No. 0820-1232, Parts list sensor VS3D, Revision: D, Pages: 1

Drawing No. 0820-2036, Ext conn interfacebox VS3D, Revision: B, Pages: 1

Drawing No. 20210079RPT02, Electromagnetic compatibility test report, DARE!! Services B.V. The Netherlands,

Date: 07-Sep-2021, Revision: -, Pages: 56

Drawing No. 20210621RPT01, Electromagnetic compatibility test report, , DARE!! Services B.V. The Netherlands,

Date: 07-Sep-2021, Revision: -, Pages: 15

Drawing No. 21C00070RPT01, Product Test Report, DARE!! Services B.V. The Netherlands, Date: 24-Aug-2021,

Revision: -, Pages: 31

Drawing No. Analyses document, Analyses document, Revision: B, Pages: 27

Drawing No. Datasheet crystal, Datasheet crystal interfacebox type ASTMUPCE-33-25.000MHZ-LJ-E-T, Revision: -,

Pages: 1

Drawing No. M21.001-P21.001, Maritime vibration tests on a VS3D interfacebox, Revision: -, Pages: 1

Drawing No. Performance test, VAF Instruments B.V., The Netherlands, Date: 16-Sep-2021, Revision: -, Pages: 13

Drawing No. Performance test VAF Instruments B.V., The Netherlands, Date: 23-Dec-2020, Revision: -, Pages: 13

Drawing No. TIB-778, Technical manual Viscosense 3D, Revision: -, Pages: 38

Drawing No. TIB-775-GB-0418(2), Technical manual Viscosense 3, Revision: GB, Pages: 42

Drawing No. comparison power supply, Comparison power supply, Revision: A, Pages: 10

Drawing No. 0820-1068-B, Dim.drawing VS2\_VS3\_VS3D housing, Revision: B, Pages: 1

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Drawing No. 0820-1230-G, Part list VS2\_VS3 sensor, Revision: G, Pages: 1

Drawing No. PB-782-GB-0319, ViscoSens 3 and 3D, Revision: -, Pages: 1

Drawing No. 0297-0111, TEST REPORT OF THE VISCOSENSE INTERFACE BOX VS3, DARE Consultancy, The Netherlands, Date: 20-02-2014, Revision: GB, Pages: 1

Drawing No. 13C01765RPT02, ELECTROMAGNETIC COMPATIBILITY TEST REPORT (Model VS3, Part number 0279-0111), DARE Consultancy, The Netherlands, Date: 19-Feb-2014, Revision: GB, Pages: 53

Drawing No. 2169489.0501-EMC, EMC TEST REPORT FOR AN INTERFACE BOX (Model VS3, Part number 0279-0111), DEKRA Certification BV, The Netherlands, Date: 10-Feb-2014, Revision: -, Pages: 13

Drawing No. 17C00339RPT04, Electromagnetic Compatibility Test Report for the viscosity sensor, DARE Measurement, The Netherlands, Date: 19-07-2017, Revision: GB, Pages: 42

Drawing No. 2171208.01, DEKRA IP Test, The Netherlands, Revision: 00, Date: 25.04.2014, Pages: 18

#### **Terms of Validity:**

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#### **STANDARDS**

##### **ABS Rules:**

- Marine Vessels Rules (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-1-1/7.15, 4-8-3/1.7, 4-8-3/1.9, 4-9-9/7, 4-8-3/1.11, 4-9-9/13, 4-9-9/Table1;
- Facilities on Offshore Installations (2021): 1-1-4/9.7, 1-1-A2, 1-1-A3;
- Mobile Offshore Units (2021): 1-1-4/9.7, 1-1-A2, 1-1-A3, 4-1-1/7.9, 6-1-1/9, 6-1-1/13; 4-3-1/9, 4-3-1/11, 4-3-1/15;
- Steel Vessels for Service on Rivers and Intracoastal Waterways (2021): 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-1-1/21, 4-5-1/9, 4-5-1/13, 4-5-1/17;
- High Speed Crafts (2021): 1-1-4/11.9, 1-1-A2, 1-1-A3, 4-1-1/37, 4-6-1/9, 4-6-1/11, 4-6-1/15, 4-6-1/17, 4-7-9/ Table 9;
- Steel Barge Rules (2021): 1-1-4/7.9, 1-1-A3, 1-1-A4, 4-1-3/5.7;

##### **National:**

NA

##### **International:**

IACS E10 Rev7:2018

##### **Government:**

NA

##### **EUMED:**

NA

##### **OTHERS:**

NA