

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Safety Control Unit for Rotating Machinery**

with type designation(s)

Oil Mist Detection System VISATRON VN301plus / VN301plus Ex

Issued to

**Schaller Automation Industrielle Automationstechnik GmbH
& Co KG****BLIESKASTEL Saarland, Germany**

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**Application :****Location classes can be found on page 2.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**This Certificate is valid until **2019-07-12**.Issued at **Hamburg** on **2017-07-13**DNV GL local station: **Augsburg**for **DNV GL**Approval Engineer: **Didier Girardin**

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.

Certificate No: **TAA00001B8**
File No: **852.90**
Job Id: **262.1-013001-2**

Product description

The Oil Mist Detector (OMD) VISATRON® VN301^{plus} / VN301^{plus} Ex system made by Schaller Automation Industrielle Automationstechnik GmbH & Co KG is a safety system protecting reciprocating internal combustion engines against oil mist explosion, caused by spontaneously occurring oil mist.

System hardware location classes					
Type	Temperature	Humidity	Vibration	EMC	Enclosure
VN301 plus - CU (Central Unit)	B	B	B	A	B (IP65)
VN301 plus - V (Sensor Unit, vertical connection)	B	B	B	A	B (IP65)
VN301 plus - H (Sensor Unit, horizontal connection)	B	B	B	A	B (IP65)
VN301 plus Ex - V (Sensor Unit, Ex, vertical connection)	B	B	B	A	B (IP65)
VN301 plus Ex- H (Sensor Unit, Ex, horizontal connection)	B	B	B	A	B (IP65)

List of software	
Unit name	Software version
VN301 plus - CU (Central Unit)	1.15
VN301 plus - V (Sensor Unit, vertical connection)	1.14
VN301 plus - H (Sensor Unit, horizontal connection)	1.14
VN301 plus Ex - V (Sensor Unit, Ex, vertical connection)	1.14
VN301 plus Ex - H (Sensor Unit, Ex, horizontal connection)	1.14

The Type Approval covers hardware and software listed under Product description.

Place of manufacture

Schaller Automation Industrielle Automationstechnik GmbH & Co KG,
Blieskastel,
Federal Republic of Germany

Application/Limitation

1. Ex-certification is not covered by this certificate. Application in hazardous area to be approved in each case according to the Rules and Ex-Certification / Special Condition for Safe Use listed in valid Ex-certificate issued by a notified/recognized Certification Body.
2. List of control & monitored points (including alarms, shutdowns, set points, etc.) shall be according to the engine's intended function (propulsion, auxiliary genset, emergency genset, etc.) and shall comply with the vessel's main class requirements in DNV GL Rules for Ships, HS, LC and NSC Pt.4 Ch.3 Sec.1 Table 9, 10, 11 and, if Ship Rules and E0 notation apply, Pt.6 Ch.2 Sec.2 Tables 4 and 8.

Product certificate

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 A 202 will **not be** required. Correct configuration and set up for each delivery to be tested as part of switchboard functional testing and during commissioning after installation.

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- Confirmation that List of control & monitored points is like stated in Application/Limitation point 2

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 GL for evaluation and approval.

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Major changes in the software are to be approved before being installed in the computer.
A Certification of Application Functions may be required for the particular vessel.

Tests carried out

Applicable tests according to Class Guideline DNVGL-CG-0339, Nov 2017

Applicable tests according to IACS UR M67 (Rev.2 Feb 2015)

Functional type test at Schaller Automation Industrielle Automationstechnik GmbH & Co KG, Blieskastel, Federal Republic of Germany, 2012-07-18

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 at least every second year and at renewal of this certificate.

END OF CERTIFICATE