

TYPE APPROVAL CERTIFICATE**This is to certify:****That the Monitoring System**

with type designation(s)

**OTS 2.1 Temperature Alarm System,
OPS 2.1 Pressure Alarm System,
OVS 2.1 Vapour Alarm System**

Issued to

**Autronica Fire and Security AS
Tønsberg, Norway**

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.****Location classes:**

Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclosure	Required protection according to the Rules to be provided upon installation on board

Issued at **Høvik** on **2017-06-23**for **DNV GL**This Certificate is valid until **2019-06-30**.DNV GL local station: **Sandefjord**Approval Engineer: **Jan Aksel Nilsen****Odd Magne Nesvåg
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.



Product description

OPS 2.1 Pressure Alarm System, consisting of the following main units:

Remote Alarm Unit (approved for installation on bridge)
Alarm Unit, AU2.1 Rev 1.00, SW version V1.xx (Rev. 1.10 applicable at Type Approval date)
Pressure sensor, BD Sensors GmbH, DMK 458 (DNV certificate no. A-13715)
Galvanic isolating barrier, GM International, S.R.L D10xx series

OTS 2.1 Temperature Alarm System, consisting of the following main units:

Remote Alarm Unit (approved for installation on bridge)
Alarm Unit, AU2.1 Rev 1.00, SW version V1.xx (Rev. 1.10 applicable at Type Approval date)
Temperature sensor, Tech Instruments AS, Pt-100, W-SOK, W-GYK, MH-6.0-3
Transmitter, PR Electronics, 5333B
Galvanic isolating barrier, GM International S.R.L, D10xx series

OVS 2.1 Vapour Alarm System, consisting of the following main units:

Remote Alarm Unit (approved for installation on bridge)
Alarm Unit, AU2.1 Rev 1.00, SW version V1.xx (Rev. 1.10 applicable at Type Approval date)
Galvanic isolating barrier, GM International S.R.L, D10xx series
Pressure sensor, BD Sensors GmbH, DMK 458 (DNV certificate no. A-13715)
Flow sensor (ring initiator), Pepperl+Fuchs, RC10-14-N3
Oxygen sensor, Crowcon Xgard type 1
Cabinet on deck, Rittal KEL 9207 (IP 66)

Application conditions

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)

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

As long as the units are covered by the Type Approval, a product certificate according to Pt.4 Ch.9 Sec.1 [1.2.3] will not be required. Correct configuration and set up for each delivery to be tested during commissioning after installation.

Software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV GL for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Application/Limitation

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.

When the type approved software is revised (affecting all future deliveries) DNV GL is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

Job Id: **262.1-000517-15**
Certificate No: **TAA000019W**

Type Approval documentation

Booklet "Type approval documentation – Alarm Systems OGS 2.1 / OPS 2.1 / OTS 2.1" including test reports, manuals, data sheets, certificates and drawings, issued by Omicron, not dated.
Booklet "Documentation – Vapour Alarm System OVS 2.1 OP A – For DNSY PC 350-12", issued by Omicron, not dated.

Type approval periodical assessment report for A-14317, dated 2017-03-31.
Software revision history document 841-JE 185 010, dated 2010-12-08.

Tests carried out

Hardware tested according to applicable tests in Standard for Certification No. 2.4.

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

A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE