DNV·GL

Certificate No:
**TAA0000036**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Level Indicating System**

with type designation(s)
**MultiPurpose Monitoring and Control System, AJB, 500-x, Transmitters**

Issued to
## Scanjet Ariston AS
**PORSGRUNN, Norway**

is found to comply with
**Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards**

## Application :

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

**Location classes:**

| Type | Temperature | Humidity | Vibrat. | EMC | Enclosure |
|---|---|---|---|---|---|
| **MultiPurpose Monitoring and Control System** | **B<br>A for display unit TDU<br>D for deck display<br>TPC 196** | **B** | **A** | **B** | **Required protection according to the Rules shall be provided upon installation on board** |
| **AJB, 500-x, Transmitters** | **D** | **B** | **A** | **B** | **D** |

This Certificate is valid until **2017-08-18**.

Issued at **Høvik** on **2015-08-19**

for **DNV GL**

DNV GL local station: **Sandefjord**

Approval Engineer: **Andrzej Gdaniec**

**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.


© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id: **262.1-002498-7**
Certificate No: **TAA0000036**

## Product description

MultiPurpose Monitoring and Control System consisting of:

| | |
|---|---|
| Display Unit | TDU Rev.3 |
| Control Unit | TCU Rev.3 |
| Analog Input Unit | AN_ZBANA Rev.6 |
| Digital Input Unit | AN_ZB485 Rev.5 |
| Panel Indicator | TPC140 Rev.1 |
| Panel Indicator | TPC350 Rev.1 |
| Deck Display | TPC196 Rev.1 |
| Junction box | AJB 500-x |
| Amplifier | AN-SGCNV (incl. in AJB 500-x) |
| Pressure/ Temperature sensor | P906-011x |
| Pressure transmitters | P986-012x, ATM/N/Ex 34x…., ATM/Ex 33x…. |
| PC/Workstation | Type Approval cert.no.: … (Present model to be filled in on Certificate "master copy" by manufacturer) |

Software: Application software/firmware versions: 2.6.x.x

Application:
- Level monitoring
- High / High-high cargo level alarm system
- Cargo pressure monitoring

## Application/Limitation

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

- Reference to this Type Approval Certificate
- Functional description
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- List of control and monitored points
- Test program for certification

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

The current software numbers and versions are listed in internal release document F03&02-3, rev.5. 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 (affects first two digits of SW version, covering major functionality and/or safety matters), a new type test may be required and the certificate may have to be renewed to identify the new software version.

Product certificate

Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

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.
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.

## Type Approval documentation

## Tests carried out

Applicable tests according to DNV 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

Periodical assessment is to be performed at least every second year and at renewal of this certificate.

END OF CERTIFICATE