

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Public Address and General Alarm System**with type designation(s)  
**SPA-V2**

Issued to

**ZENITEL NORWAY AS AVD HORTEN  
HORTEN, Norway**

is found to comply with

**DNV GL rules for classification – Ships, offshore units, and high speed and light craft****IMO A.1021(26) Code on alerts and indicators (2009)****LSA Code VII 7.2****IMO MSC Circ 808****General requirements for electromagnetic compatibility for all electrical and electronic ship's equipment (IMO Res. A.813(19))****Application :****See page 2****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2017-10-02**for **DNV GL**This Certificate is valid until **2022-09-17**.DNV GL local station: **Sandefjord**Approval Engineer: **Steinar Kristensen****Jan Tore Grimsrud  
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.



Job Id: **262.1-003471-7**  
 Certificate No: **TAA00001D2**  
 Revision No: **2**

## Product description

The SPA-V2 system can be set up in different configurations. The type approval covers the following variants of the system:

### **Only PA system:** SPA2-xx-P

Notes:

- xx defines the height of the cabinet in HU (Height Units) which could be 12, 16, 20 and 24 for this variant.
- The system contains minimum one approved amplifier.

### **Integrated PA/GA system for standard vessels:** SPA2-xx-GD

Notes:

- xx defines the height of the cabinet in HU (Height Units) which could be 16, 20 and 24 for this variant.
- The system contains minimum two approved amplifiers.

### **Integrated PA/GA system for passenger vessels:** SPA2-xx-GP

Notes:

- xx defines the height of the cabinet in HU (Height Units) which could be 12, 16, 20 and 24 for this variant.
- The system contains minimum two approved amplifiers divided in two separate racks.

### **Approved Modules and subunits:**

<b>Module/Subunit</b>	<b>Type</b>
Amplifiers	Zenitel: VPA-120 (120W), VPA-240 (240W), VPA-400 (400W) Paso: AW-8121 (120W), AW-8241 (240W), P-8501 (500W)
Microphone panels	SPA-M1-V2, SPA-M1-D, SPA-M6-V2, SPA-M6-D
Alarm panels	SPA-AC6, SPA-AC6-D
Combined alarm and microphone panels	SPA-W1-V2, SPA-W1-D, SPA-W1AR-V2, SPA-W1AR-D, SPA-W6A4 and SPA-W6A4-D
Microphones	ETB-1-TB, MB-30G, P-66
Volume Controls <sup>1)</sup>	VM5-R, VM15-R, VM50-R, VM15-RD, VM50-RD, VM15-RDF, VM50-RDF, VCOR-15, VCOR-15F, VCOR-60, VCOR-60F
Function boards	SPA-TERM-V2, SPA-CHIME-V2, SPA-EMS-V2, SPA-FAIL, SPA-MUL-V2, SPA-EE3-V2, SPA-EE3D-V2, SPA-AL-REL-V2, SPA-VDR-V2, SPA-REL-V2, SPA-DUALAL-V2
Power Supply Unit	AEH80US24 (XP plc)
Racks	Paso 58xx-D, in which the xx means the height in HU- units.

<sup>1)</sup>Volume controls are passive units only. The controls have not been subject to testing according to IEC 60945, but are included in the certificate as they are integral parts of the system design.

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### Application/Limitation

1. Equipment is to be installed in protected environment, i.e. indoor.
2. Drawings of the system, specifying the number and type of approved amplifiers installed in the system shall be available and attached to the delivered racks.
3. The maximum height of units shall be 24 HU.
4. When used as PA/GA, the input to the system for Talk Back shall not be used since this have the highest priority.
5. Any PA panel which is not used for emergency PA activation shall have a lower priority than GA.

### Type Approval documentation

DNV GL No	Doc. Id	Rev.	Description
37	DANAK-1911533	2011-08-19	REPORT: Delta, Environmental test report for SPA-V2 system
36	A100K10371	v.2.2	MANUAL: Zenitel, SPA-V2 User Manual
35	A100K10370	v.4.1	MANUAL: Zenitel, SPA-V2 Installation & Configuration Manual
34	A100K10369	v.4.0	MANUAL: Zenitel, SPA-V2 System Manual
30	2008-04-20	1.4	REPORT: Zenitel, Performance Test DNV PA/GA Type Approval of SPA-V2 system
22	2008-03-28	1.1	REPORT: Zenitel, SPA-V2 Type Approval-product testing explanation
4	198453	28 July 2006	REPORT: Delta, Type Approval testing of VPA-120, VPA-240 and VPA-400 PA/GA System power amplifiers
3	197395	12 may 2004	REPORT: Delta, Type Approval testing of Talk-Back and PA/GA Systems

### Tests carried out

- Environmental testing: IEC 60945 (2002)
- Performance testing: Functional tests according to DNV GL Type Approval program 848.22

### Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.

### Periodical assessment

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

The scope of the periodical/renewal assessment is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.