

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Public Address and General Alarm System**with type designation(s)
HPA-97XX Series

Issued to

HANSHIN ELECTRONICS CO.,LTD.
Busan, Republic of Korea

is found to comply with

DNV GL rules for classification – Ships, offshore units, and high speed and light craft**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))****IMO A.1021(26) Code on alerts and indicators (2009)****Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Busan** on **2017-07-10**This Certificate is valid until **2022-07-09**.for **DNV GL**DNV GL local station: **Gimhae Station**Approval Engineer: **Geun Young Park**

Michael Jost Auf der Stroth
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

The Public Address and General Alarm System, HPA-97XX Series, as specified under "models" as follow:

Models

HPA-97XX-YZ

is the model/variant designation with an alphanumeric code where:

XX =	2 digits 00 – 29 indicating output power from 200 W up to 4000 W
Y =	D: Double rack type dual PA system, with GA system integrated
	S: Single rack type dual PA system, with GA system integrated
	N: Single rack type single PA system, no GA system integrated
Z =	A or D, denotes the power supplies for the system

Approved modules and subunits

Module / Subunit	Type
Main controller	PMC-9721, PMC-9722 (Note 1)
Alarm generator	PGA-9751, PGA-9752 (Note 2)
Fault tolerant power amplifier	PMA-9201, PMA-9401, PMA-9402
Power supply & monitor	PPM-9731, PPM-9741
Fault detector	PFD-9771, PFD-9772
Interface board	PMP-970P-031
Mike & remote terminal board	PMP-970P-041
Speaker terminal board	PMP-970P-051
Alarm generate terminal board	PMP-970P-141
Remote controller	HBC-210XX
General emergency switch box	HEG-9XXX
Loudspeakers, exposed areas	HWS-131X, HWS-153X, HWS-150XXX, HWS-155XXX, HWS-181XXX, HFS-182XXX
Loudspeakers, protected areas	HOS-177X, HBS-172X, HFS-173X, HFS-174X, HHS-175X, HCS-176X
Microphone	HDM-720XX, HDM-012XX, HDM-930, HPH-050X
Microphone connection box	HMC-601XX, HMS-602XX, HCN-151X, HCN-251X, HMS-050XX
Junction box	HJB-902, HJB-903, HJB-904, HJB-905
Rack	Model: 1055, 1300, 1500

Software version

Unit name	Programme name	Version
PGA-975x Alarm Generator	HPA-9700_Alarm	V2.0x
PMC-972x Main Controller	HPA-9700_Main	V2.0x
	HPA-9700_M_S/P_Sel	V2.0x
PFD-977X Fault Detector	HPA-9700_Fault	V2.0x
HBC-210 Remote Controller	HPA-9700_Remote	V2.0x

To cover minor software upgrades, the version revision has been given alphanumeric designation: V2.0x

Application/Limitation

- Hanshin HPA-97XX series/ equipment is to be installed according to operation and installation manual for compliance with the following codes/ rules/ regulations:
 - SOLAS
 - HSC Code
 - MODU Code
 - DNV GL Statutory Interpretations, as amended
- The HPA-97XX Double Rack type Dual PA/GA system (model D) can be used for passenger vessel. When used for passenger vessels, the duplicated parts of the system are to be installed in separate main vertical fire zones. Final approval of the PAGA system for compliance with SOLAS requirements of «Safe Return to Port» shall be carried out DNVGL, based on individual assessment of the design for each passenger vessel.

Type Approval documentation

Tests carried out

- Environmental testing: IEC60945(2002)
- Performance testing: Functional tests according to DNV Type Approval program 848.22

Marking of product

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

Periodical assessment

A retention survey is to be performed at least once every second year, and again upon renewal of this certificate. The scope of the retention/renewal survey 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.