

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Public Address and General Alarm System**with type designation(s)  
**MPA 1600**

Issued to

**Jotron A.S.**  
**TJODALYNG, Norway**

is found to comply with

**Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards****IMO MSC Circ 808****LSA Code VII 7.2****IMO A.1021(26) Code on alerts and indicators (2009)****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 **2017-06-30**for **DNV GL**This Certificate is valid until **2022-06-29**.DNV GL local station: **Sandefjord**Approval Engineer: **Rolf Heger****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: **262.1-003245-5**  
Certificate No: **TAA0000084**  
Revision No: **1**

Public Address and General Alarm System, comprises the following modules <sup>1)</sup>:

Module	Article no	Location
Main Control Unit	MPA 1600	Protected
Amplifier (options)	PA-6312, PA-9312	Protected
	PA-6324, PA-9324	Protected
	PA-6336, PA-9336	Protected
	1670	Protected
	1671	Protected
PA Panel	1601	Protected
Alarm (GA) Panel	1603	Protected
Table Access Unit	1605	Protected
19" Access Unit	1606	Protected
Power Supply Units	DICS6100-110/230VAC & 24VDC	Protected
Racks	Rittal EL (15U Wall Cabinet) or	Protected
	Rittal TS8 (42HE Equipment Rack)	Protected

<sup>1)</sup> Actual configuration may vary based on requirements for individual installations. Only modules listed in certificate are approved for installation.

**Software modules :**

- MPA Firmware: 2.x.x
- Kernel: 2.x.x-vrs1-mpa2.x
- Ramdisk: ramdisk-mpa-3.x
- Application: Pampas server v.6.x.x
- MPA Access Panel Firmware: 3.x.x

**Application/Limitation**

- The MPA 1600 may be used in cargo ships, passenger vessels, high-speed & light craft and mobile offshore units for compliance with the following codes/rules/regulations:
  - SOLAS
  - HSC Code
  - MODU Code
  - DNV GL Statutory Interpretations, DNVGL-SI-0364, July 2015.
- When used for PA on passenger vessel or integrated PA and GA on any vessel, the system shall be duplicated. When used for passenger vessels the duplicated parts of the system are to be installed in separate main vertical fire zones.
- Drawings of the delivered system, specifying the number and type of approved amplifiers and other essential modules in the centrals shall be available and attached to the delivered racks.
- For feedback cancellation, two options are possible: Muting of the nearby loudspeakers and "LOCAL MUTE Relay". If "LOCAL MUTE Relay" is used, surveyor shall check that 1- PA emergency is not lost when GA or other alarms are initiated during recording or broadcasting of the recorded message. 2- When the recorded PA announcement is broadcasted, then the activation of GA should not need any other actions other than pressing the GA push button.

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### Type Approval documentation

DNV GL No	Doc. Ref.	Rev.	Description
9	03118-100-DE	2008-03-06	Description: Jotron, MPA 1600 System, Type Approval requirements, System Description
32	03118-000-DE	7	Manual: Jotron, MPA 1600 Handbook Rev 7
23	-	01/2016	Manual: Jotron, User Manual for MPA 1605 and MPA 1606
2	2007-3218	01	Report: DNV, EMC and Environmental test report for MPA 1600
3	2007-3256	01	Report: DNV, EMC and Environmental test report for MPA 1600 (New cabinet)
13	2003-3482	02	Report: DNV, EMC testing of Public Address System, Model SPA 1500
14	2005-3529	01	Report: DNV, Environmental testing of Public Address System, Model SPA 1500
6	MPA 1601-1603		Report: Jotron, Design review between versions of MPA 1601 Control Unit and MPA 1601 Alarm Panel
15	03118-100-TP	3	Report: Jotron, Performance test report for MPA 1600 Public Address and General Alarm System
21	E15277.01	01	Report: Nemko, EMC and Environmental test report for MPA 1605 and MPA 1606
27	E17059.00	-	Report: NEMKO, EMC and Environmental Test Report PA/GA Power Amplifier Phontech 1671
12		1-2008.10.03	Specification: Jotron, Design Manual for Public Address and General Alarm System MPA 1600
31		2012/04/25	Statement: Jotron, MPA 1600 - Certificate of conformance
34		2017/06/30	Statement: Jotron, Salt mist test Waiver for Phontech 1671 Amplifier

### Tests carried out

- Environmental tests: IEC 60945 (2002)
- Performance tests: 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. 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.