

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Peripheral Equipment**

with type designation(s)

**KEI-15LCD, KEI-17LCD, KEI-19LCD, KEI-21LCD**

Issued to

**KEI System Co., Ltd.  
Osaka, Osaka Pref., Japan**

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:**

<b>Temperature</b>	<b>B</b>
<b>Humidity</b>	<b>B</b>
<b>Vibration</b>	<b>A</b>
<b>EMC</b>	<b>B</b>
<b>Enclosure</b>	<b>A / IP20</b>

Issued at **Høvik** on **2017-11-15**for **DNV GL**This Certificate is valid until **2022-12-31**.DNV GL local station: **Kobe**Approval Engineer: **Ståle Sneen****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

KEI marine desk mount LCD display panels comprising the following models:

Model name	Description	Power supply	Compass safe distance
KEI-15LCD	15" 4:3 format	AC 100 V / AC 220 V	Standard: 150 cm, Steering: 95 cm
KEI-17LCD	17" 4:3 format	AC 100 V / AC 220 V	Standard: 150 cm, Steering: 95 cm
KEI-19LCD	19" 4:3 format	AC 100 V / AC 220 V	Standard: 150 cm, Steering: 95 cm
KEI-21LCD	21" 4:3 format	AC 100 V / AC 220 V	Standard: 150 cm, Steering: 95 cm

## Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV GL rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

## Type Approval documentation

KEI SYSTEM CO., LTD. – Environmental test procedure No. DNV-1251LCD-501 dated 2012-03-23  
KEI SYSTEM CO., LTD. – Specification No. DNV-1521LCD-502 dated 2012-03-23  
KEI SYSTEM CO., LTD. – Environmental test report No. LRS-1521LCD-503 dated 2006-09-20  
KEI SYSTEM CO., LTD. – Environmental test report No. NK-1521LCD-504 dated 2006-10-30  
KEI SYSTEM CO., LTD. – Environmental test report No. DNV-TYPLCD-505 dated 2013-04-05

Type approval renewal assessment report for A-13508, DNV GL Kobe 2017-10-26.

## Tests carried out

Applicable tests according to Standard for Certification No. 2.4, April 2006.

The 'Compass safe distance' was measured according to section 11.2 of IEC 60945 4th edition (2002).

## Marking of product

Manufacturer: KEI System Co., Ltd.  
Model name: As listed under product description  
Serial No.: Unique serial number for each delivered item  
Power supply: AC100/220V 50/60HZ

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

END OF CERTIFICATE