DNV·GL

Certificate No:
TAA0000052

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Personal Computer

with type designation(s)
HP Z440 Workstation

Issued to
Mariner Systems (UK) Ltd.
Wokingham, BK, United Kingdom

is found to comply with
DNV GL rules for classification – Ships and offshore units

Application :

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

Approved only with Mariner Kit shown on page 2.

Location classes:

Temperature	**D**
Humidity	**B**
Vibration	**A**
EMC	**B**
Enclosure	**Required protection according to DNV GL Rules shall be provided upon installation on board**

This Certificate is valid until **2020-10-07**.
Issued at **Høvik** on **2015-10-08**

DNV GL local station: **Newcastle-upon-Tyne**

Approval Engineer: **Ingrid Hagen Johansen**

for **DNV GL**
Digitally Signed By: Sneen, Ståle
Location: DNV GL Høvik, Norway
Signing Date: 2015-10-08, on behalf of

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.

Job Id: **262.1-019899-1**
Certificate No: **TAA0000052**

Product description
HP Z440 Workstation
Verified for nominal voltage: 230V

Application/Limitation
Approval **ONLY** applies when used in conjunction with Mariner Systems (UK) Ltd :

Monitor Mariner Kit:
MS3050 HP Z440 Workstation (Desktop configuration)
MS3060 HP Z440 Workstation (Tower configuration)

Steering, Standby and Emergency Compass Safe Distance 1.0 Degree deflection: 500mm
Standard Compass Safe Distance 0.3 Degree deflection: 600mm

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 Ships Pt.4 Ch.9 Control and Monitoring Systems.

Product certificate
If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. 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 for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

Type Approval documentation
Report TL15041, Test Unit A HP Z440 Workstation, dated 2015-05-22
Report TL15039, Test Unit B HP Z440 Workstation, dated 2015-05-22
Report TL15042, Test Unit C HP Z440 Workstation, dated 2015-05-26
QuickSpecs HP Z440 Workstation, doc. DA-15098 Worldwide – Ver.8, dated 2015-05-01
Mariner Systems (UK) Ltd, Marine Test Requirements based on IACS Unified Requirement E10 & IEC60945 (Issue 9)
Mariner Systems (UK) Ltd, Component Options, doc. HPZ440–Components Jun2015, dated 2015-06-12
MS3050 Assembly, Dwg. No. MS3050_A, rev. 3, dated 2015-06-11
MS3060 Assembly, Dwg. No. MS3060_A, rev. 3, dated 2015-06-11

Tests carried out
Applicable tests according to Standard for Certification No. 2.4, April 2006.
For the bridge mounted components the 'Acoustic noise and signals' and the 'Compass safe distance' were measured according to sections 11.1 and 11.2 of IEC 60945, 4th edition (2002).

Marking of product
Mariner Kit Number + HP product label, as listed under Application/Limitation

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