

# TYPE APPROVAL CERTIFICATE

## This is to certify:

### That the Personal Computer

with type designation(s)  
**HP Z4 G4 Workstation**

Issued to

**Mariner Systems (UK) Ltd.**  
**Wokingham, Berkshire, United Kingdom**

is found to comply with

**DNV GL rules for classification – Ships, offshore units, and high speed and light craft**

## Application :

**Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**

**Approved only with Mariner Kit shown on page 2.**

### Location classes:

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

Issued at **Høvik** on **2019-05-16**

for **DNV GL**

This Certificate is valid until **2024-05-15**.

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

Approval Engineer: **Ståle Sneen**

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**Trond Sjøvåg**  
**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: **262.1-031013-1**  
Certificate No: **TAA00002BU**

## Product description

HP Z4 G4 Workstation.

Verified for nominal supply voltage: 230 V ~ 50/60 Hz and 115 V ~ 60 Hz

## Application/Limitation

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

### Mariner Kit:

MS3070 HP Z4 G4 Workstation (Desktop configuration)

MS3080 HP Z4 G4 Workstation (Tower configuration)

Only to be installed together with in-line power filter RF 1007-MST-A.

Shielded cable is required for connection to Ethernet port.

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

Standard Compass Safe Distance 0.3 Degree deflection: 700 mm

## 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.

### 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 certification the clause for software control will be put into force.

### Software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV GL for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

## Type Approval documentation

Report TL18111 Issue 1, HP Z4 G4 Workstation Test Unit A, dated 2019-01-22

Report TL18112 Issue 1, HP Z4 G4 Workstation Test Unit B, dated 2019-01-22

Report TL18113 Issue 1, HP Z4 G4 Workstation Test Unit C, dated 2019-01-22

QuickSpecs HP Z4 G4 Workstation, doc. c05527757 – DA 15954 – Worldwide – Version 9, dated 2018-09-21

Mariner Type Approval Test Requirements – Issue 13, dated 2017-11-10

Mariner Systems (UK) Ltd, HP Z4 G4 Workstation – Component Options, doc. HP Z4 G4 Components Feb 19, dated 2019-02-04

Filter type RF 1007-MST-A, Dwg. No. DS 105-MST, Issue No. 0.1

MS3070 Assembly, Dwg. No. MS3070\_A, Issue No.1, dated 2018-11-12

MS3080 Assembly, Dwg. No. MS3080\_A, Issue No.1, dated 2018-11-12

## Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Shock test (15g, 11ms, repeated 20 times for each axis) according to EN 60068-2-27:2009.

Applicable tests for protected equipment according to IEC 60945, 4<sup>th</sup> edition (2002), except section 8.12 'Corrosion'.

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

END OF CERTIFICATE