

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Peripheral Equipment**with type designation(s)
HP EliteDisplay E202/E232/E242 Monitors

Issued to

Mariner Systems (UK) Ltd.
WOKINGHAM BERKSHIRE, United Kingdomis found to comply with
DNV GL rules for classification – Ships and offshore units**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:**

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

Issued at **Høvik** on **2017-07-12**for **DNV GL**This Certificate is valid until **2022-07-11**.DNV GL local station: **Newcastle-upon-Tyne**Approval Engineer: **Ingrid Hagen Johansen****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: **262.1-024771-1**
Certificate No: **TAA000015Y**

Product description

Model	Unique Identifier
HP EliteDisplay E202 20" Monitor	M1F41AA/M1F41AT
HP EliteDisplay E232 23" Monitor	M1N98AA/M1N98AT
HP EliteDisplay E242 24" Monitor	M1P02AA/M1P02AT

Verified for nominal voltage: 230V

Application/Limitation

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

Model	Mariner Kit
HP EliteDisplay E202 20" Monitor	MS1450 HP EliteDisplay E202 20" Monitor (Desk Mount) MS1455 HP EliteDisplay E202 20" Monitor (Wall Mount) MS1460 HP EliteDisplay E202 20" Monitor (Console Mount)
HP EliteDisplay E232 23" Monitor	MS1470 - HP EliteDisplay E232 23" Monitor Kit (Desk mount) MS1475 - HP EliteDisplay E232 23" Monitor Kit (Wall mount) MS1480 - HP EliteDisplay E232 23" Monitor Kit (Console mount)
HP EliteDisplay E242 24" Monitor	MS1510 – HP EliteDisplay E242 24" Monitor Kit (Desk Mount) MS1515 – HP EliteDisplay E242 24" Monitor Kit (Wall Mount) MS1520 – HP EliteDisplay E242 24" Monitor Kit (Console Mount)

HP EliteDisplay E202 20" Monitor:

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

HP EliteDisplay E232 23" Monitor:

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

HP EliteDisplay E242 24" Monitor:

Steering, Standby and Emergency Compass Safe Distance 1.0 Degree deflection: 600mm
Standard Compass Safe Distance 0.3 Degree deflection: 700mm

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 TL16045, HP EliteDisplay E202 20 inch Monitor, rev.2, dated 2017-04-25
Report TL15099, HP EliteDisplay E232 23 inch Monitor, rev.2, dated 2017-04-25
Report TL16003, HP EliteDisplay E242 24 inch Monitor, rev.2, dated 2017-04-25
QuickSpec HP EliteDisplay E202 20-inch Monitor, doc. c04924740-DA-15508-Worldwide – Ver.2, dated 2016-01-19
QuickSpec HP EliteDisplay E232 23-inch Monitor, doc. c04784501-Worldwide – Ver.3, dated 2015-10-15
QuickSpec HP EliteDisplay E242 24-inch Monitor, doc. c04820064-DA-Worldwide – Ver.2, dated 2015-10-16
Marine Type Approval Test Requirements (Issue 11), dated 2016-02
MS1450 Assembly, Drw. No. MS1450_A, rev.1, dated 2016-05-16
MS1455 Assembly, Drw. No. MS1455_A, rev.1, dated 2016-05-16
MS1460 Assembly, Drw. No. MS1460_A, rev.1, dated 2016-05-16
MS1460 Assembly, Drw. No. MS1460_DD, rev.1, dated 2016-05-16
MS1470 Assembly, Drw. No. MS1470_A, rev.1, dated 2016-01-04
MS1475 Assembly, Drw. No. MS1475_A, rev.1, dated 2016-01-04
MS1480 Assembly, Drw. No. MS1480_A, rev.2, dated 2015-12-17
MS1480 Assembly, Drw. No. MS1480_DD, rev.1, dated 2015-11-16
MS1510 Assembly, Drw. No. MS1510_A, rev.1, dated 2016-01-04
MS1515 Assembly, Drw. No. MS1515_A, rev.1, dated 2016-01-04
MS1520 Assembly, Drw. No. MS1520_A, rev.1, dated 2015-12-17
MS1520 Assembly, Drw. No. MS1520_DD, rev.1, dated 2015-12-17

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.
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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE