DNV·GL

Certificate No:
MEDB00000UT

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2014/93/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the GPS equipment

with type designation(s)
Marinestar Manouvering System

Issued to
Fugro Satellite Positioning AS
OSLO, Norway

is found to comply with the requirements in the following Regulations/Standards:
Annex A.1, item No. A.1/4.14 and Annex B, Module B in the Directive. SOLAS 74 as amended, Regulation V/18, V/19 & X/3, IMO Resolution A.694(17), IMO Resolution MSC. 112(73) & 191(79) and 2000 HSC Code 13

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2021-04-30**.

Issued at **Høvik** on **2016-05-01**

for **DNV GL AS**

DNV GL local station:
Station Oslo Maritime and CAP

Approval Engineer:
Steinar Kristensen

Notified Body
No.: **0575**

Vidar Dolonen
Head of Notified Body

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Product description

Fugro Marinestar Manouvering System is available in either Server with Monitor and Keyboard, or Flat Panel Computer configurations, consisting of the below:

Unit	Description	Model name	Comment/versions
GNSS receiver	GPS/GLONASS receiving unit	9205-GNSS receiver	
Power and Interface unit	IPDU Isolating Power Data Unit	Fugro IPDU	Interfaces: 1 x RJ 45 Ethernet 2x RS232/RS422 in/out 1x 24V DC power input
Server with Display and Keyboard or Flat Panel Computer	PCS Server	enix 2000	SW version: 2.3.0.x*), 2.3.6.x*) or 2.3.7.x
	Display unit	JH 15T17 MMD-DA1	
	Keyboard	NSI KSML 92S0001-W-MC1	
	Computer with integrated display unit and with touch functionality	HD19T21 MMC-M*XX-X*CAA or HD19T21 MMC-M4I-PCBG	SW version: 2.3.6.x*) or 2.3.7.x
Gyro	Vertical Gyro	MS-350-CA-300	
Antenna unit	GNSS antenna unit	Trimble GA 810 or Zephyr Model 2 Rugged or Alison AD491 or Trimble GA 830	
Network Switch	Ethernet switch	Moxa EDS-408A-3M-ST-T	
Options			
GNSS receiver	GPS/GLONASS receiving unit	9200-GNSS receiver	
Mounting bracket	Monitor mounting bracket	HD TMB SX1-B1	

*) Without support for GLL sentence

Units listed above, except antenna units, are to be installed in a protected environment, i.e. indoor. Antenna units may be installed in an exposed environment, i.e. outdoor.

Operating System: Windows XP or Windows 7

Application/Limitation

- Equipment is to be installed according to manufacturers installation guide.

Type Examination documentation

DNV GL No	Doc. ID	Rev.	Description
85	BSH/4543/001/4412873/15-2	2015-01-09	Report: BSH, Performance test report for Marinestar THD, navigational display tests IEC 62288 (2014)
83	BSH/4612/4411362/12-3	2012-03-19	Report: BSH, Performance test report for Marinestar THD, navigational display tests IEC 62288 (2008)
73	Marinestar User Manual	2.9	Manual: Fugro, Marinestar Manouvering System User Manual and Installation Guide
71	BSH/4543/001/4412873/15	2015-02-03	Report: BSH, Performance test report for Marinestar THD incl IEC 61162-1 and IEC 61162-2
70	BSH/4612/4411362/12	2012-04-18	Report: BSH, Performance test report for Marinestar THD
68	BSH/4615/4112364/12	2012-08-23	Report: BSH, Conformance test report for Marinestar GNSS, navigational display tests
67	BSH/4615/4112004/11	2011-10-07	Report: BSH, Conformance test report for Fugro 9205 GNSS receiver
66	BSH/4543/001/4112909/15	2015-06-19	Report: BSH, Conformance test report for Fugro 9205 GNSS receiver, additional tests
65	BSH/4543/001/4072831/14	2014-09-25	Report: BSH, Performance test report for Marinestar SDME, SW ver 2.3.6.0
64	BSH/4543/001/4072751/14	2014-07-15	Report: BSH, Performance test report for Marinestar SDME, SW ver 2.3.5.0
61	BSH/4612/4411362/12-4	2012-03-19	Report: BSH, Performance test report for Marinestar THD incl IEC 61162-1 and IEC 61162-2
60	BSH/46121/4412273/12	2012-09-11	Report: BSH, IEC 61162-1 (2010) assessment report for Marinestar THD
58	BSH/4582/000/4412382/13	2013-04-03	Report: BSH, Performance test report for Marinestar THD
57	BSH/4582/000/4412380/13	2013-04-03	Report: BSH, Performance test report for Marinestar SDME, SW ver 2.3.0.0
46	20113784200	1.0	Report: Telefication, EMC test report for NSI KSML92YXXXX-Z-MCW backlight keyboard
44	E11171.02	2012-03-12	Report: Nemko, EMC test report for MS-350CA-300 Gyro
43	E12003.01	2012-02-10	Report: Nemko, Environmental test report for MS-350CA-300 Gyro
42	TL1316	Issue 2	Report: Mariner Systems, Moxa EDS-, IM-, SFP- and VPort- series produtcs test report
40	2008-3146	1	Report: DNV, JH 19T12 MMD-DA1-AAAA Technical Report
39	2008-3324	2	Report: DNV, JH 15T17 MMD-DA1-AOAA Technical Report
35	20282	0	Report: Applica ,HD 26T21 MMD-MA1-FOGA HW04 Technical Report
28	E12086.01	2012-06-15	Report: Nemko, EMC test report for HD 12T21 MMC-MWF-AABA
27	2012-3351	1	Report: DNV, HD 12T21 MMC-MWF-AABA Technical Report
25	2013-3135	0	Report: DNV, HT B22GE STC-C4K-M100 Technical report
24	2012-3311	1	Report: DNV, HT 216 STD Technical Report
23	2012-3372	1	Report: DNV, HD 24T21 MMD-MA1-FAGP Technical report
22	2011-3481	1	Report: DNV, HD 24T21 MMD-MA1-FAGA Technical

DNV GL No	Doc. ID	Rev.	Description
			Report
21	2013-3122	0	Report: DNV, HD 24T21 MMC-MYI-HABA Technical Report
20	2011-3475	1	Report: DNV, HD 24T21 MMC-MJD-AAB2 Technical Report
19	20178	0	Report: Applica, HD 24T21 MEC-M3K-AAB9-ES Technical Report
18	2012-3302	2	Report: DNV, HD 19T21 MMD-MA1-FAGA Technical Report
17	2013-3154	0	Report: DNV, HD 19T21 MMC-MWI-PAAA Technical report
16	2012-3081	1	Report: DNV, HD 15T21 STD-MA1-FAGA Technical Report
12	ESLU41836B-IEC	1	Report: MET laboratories, Environmental test report for GA830 antenna
11	EMCS41837-IEC 60945	2014-08-12	Report: MET Laboratories, EMC test report for SPS356 with GA830 antenna
10	E15122.01	2015-07-21	Report: Nemko, Vibration and compass safe distance test for GA830 antenna
7	E08460.04	2012-01-23	Report: Nemko, EMC and environmental test report for enix-2000 and enix-3000 computers
6	2011-3365	01	Report: DNV, EMC and environmental test report for Fugro 9205 GPS/GLONASS receiver
4	2009-3572	04	Report: DNV, EMC and environmental test report for Fugro 9200-G2 GPS/GLONASS receiver
2	2008-3330	01	Report: DNV, EMC test report for SPS551F GPS receiver

Tests carried out

Performance tests: IEC 61108-1 (2003)

Environmental tests: IEC 60945 (2002) incl Corr. 1 (2008)

Interface tests: IEC 61162-1 (2010)
IEC 61162-2 (1998)

Presentation of information: IEC 62288 (2014)

Marking of product

- The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location and in addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage