DNV·GL

Certificate No:
MEDB00003BT

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Gyro compass

with type designation(s)
CMZ900 Type B2, S, D

Issued to
Yokogawa Denshikiki Co., Ltd., Morioka Branch
Morioka, Iwate, Japan

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773,**
item No. MED/4.3. SOLAS 74 as amended, Regulations V/18, V/19, IMO Res. A.424(XI), IMO Res. A.694(17), IMO Res. MSC.191(79), IMO Res. MSC.302(87)

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

This Certificate is valid until **2023-07-26**.

Issued at **Høvik** on **2018-07-27**

DNV GL local station:
Yokohama

Approval Engineer:
Roger Lauritsen

Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005.

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

NORWEGIAN ACCREDITATION PROD 019

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Product description

Type B2, Type S and Type D Gyro compass consisting of the below modules.

Type S and D are available in three configurations:

- Stand alone
- Autopilot-stand type 1
- Autopilot-stand type 2

Type B2 (Basic)

Component	Art. No.	Environment
Master Compass (Stand alone type)	MKM029-1	Protected
Master Compass (Autopilot Stand type)	MKM029-2	Protected
Steering Repeater Compass	MKM056-F,P,W and 1,2	Exposed
AC Adaptor	MKR027	Protected
Bearing Repeater Compass	MKR050-P or –G	Exposed
Connection Unit	MKN019/20-P or –G	Exposed
Operation Unit	MKR040	Protected
Data Display	MHR110A	Protected
Data Display	MHR120	Protected
Serial Distributor	MHB306	Protected
Assist Monitor	MHR112	Protected

Type S (Single)

Component	Art. No.	Environment
Stand alone type		
Master Compass (Stand alone type)	MKM026-1	Protected
Control Box	MKC326-F1 or -W1	Protected
Steering Repeater Compass	MKR056-F,P,W and 1,2	Protected
Autopilot stand type 1		
Master Compass (Autopilot stand type)	MKM026-2	Protected
Control Box	MKC326-S1 or –S2	Protected
Steering Repeater Compass	MKR056-S2	Protected
Autopilot stand type 2		
Master Compass (Autopilot stand type)	MKM026-2	Protected
Control Box	MKC326-F1 or -W1	Protected
Steering Repeater Compass	MKR056-S2	Protected
Common components, all Type S configurations		
AC Adaptor	MKR027	Protected
Bearing Repeater Compass	MKR050-G or –P	Exposed
Connection Unit	MKN018-C or –S	Exposed
Connection Box	MKN019/20-P or –G	Protected
Steering Repeater Compass	MKR056-F,P,S,W and 1,2	Protected
Operation Unit	MKR040-1,-2,-3 or -4	Protected
Data Display	MHR110A	Protected
Data Display	MHR120	Protected
Serial Distributor	MHB306	Protected
Assist Monitor	MHR112	Protected

Type D (Dual)

Component	Art. No.	Environment
Stand alone type		
2 x Master Compass (Stand alone type)	MKM026-1	Protected
Control Box	MKC327-F1 or –W1	Protected
Steering Repeater Compass	MKR056-F,P,W and 1,2	Protected
Autopilot stand type 1		
Master Compass (Stand alone type)	MKM026-1	Protected
Master Compass (Autopilot stand type)	MKM026-2	Protected
Control Box	MKC327-S1 or –S2	Protected
Steering Repeater Compass	MKR056-S2	Protected
Autopilot stand type 2		
Master Compass (Stand alone type)	MKM026-1	Protected
Master Compass (Autopilot stand type)	MKM026-2	Protected
Control Box	MKC327-F1 or –W1	Protected
Steering Repeater Compass	MKR056-S2	Protected
Common components, all Type D configurations		
AC Adaptor	MKS066	Protected
AC Adaptor	MKS071	Protected
Bearing Repeater Compass	MKR050-G or –P	Exposed
Connection Unit	MKN018-C or –S	Exposed
Connection Box	MKN019/20-P or –G	Protected
Steering Repeater Compass	MKR056-F,P,S,W and 1,2	Protected
Operation Unit	MKR040-1,-2,-3 or -4	Protected
Data Display	MHR110A	Protected
Data Display	MHR120	Protected
Serial Distributor	MHB306	Protected
Assist Monitor	MHR112	Protected

Software Modules for Type B2, S and D:

PCB Name	SW Module	Version
M.MAIN BD ASSY	CD065	Axx
RPT CPU ASSY	CD062	Axx
C.MAIN BD ASSY – Type B2	V8125ZB	Axx
C.MAIN BD ASSY – Type S and D	CD066	Bxx
RPT CPU ASSY	V8125ZA	Axx

Note
CMZ900 Gyro Compass Type B2, Type S and Type D may optionally interface the following equipment:

Equipment	Art. No.	Environment
Rate of Turn Indicator	MHR130-RAT	Exposed
Azimuth Circle	MKX617	Exposed

Microsoft Tests carried out

- Environmental testing: IEC 60945 (2002) incl. corr. 1 (2008) and ISO 8728 (2014)
- Performance testing: ISO 8728 (2014)
- Serial interface testing: IEC 61162-1 (2016) and IEC 61162-2 (1998)
- Presentation of navigation information: IEC 62288 (2014)

Application/Limitation

CMZ900 shall be installed and tested according to the manufacturers Installation & User Manual.

Arrangement for dynamic speed error correction - NAUT-OC/-AW
CMZ900 arrangement for dynamic speed error correction has been found to comply with the IMO performance standards up to at least 75° latitude as required by DNV GL Nautical Safety Rules.

Type Examination documentation

DNV GL No	Doc ref	Rev.	Description
97	291432		Report: RIME - IEC60945 Compass safe distance and Rain and Spray Test Report CMZ900 Type B
96	ENV18001		Report: IPS - IEC60945 Environmantal Test Report CMZ900 Type B
95	EMC17136		Report: IPS - IEC60945 EMC Test Report CMZ900 Type B
92	IM 80B10M-22E	2nd Edition	Manual. CMZ 900B2 Gyrocompas Users Manual
91	IM 80B10M-16E	13th edition	Manual: CMZ 900B/900S Gyrocompass User's Manual
90	IM 80B10M-17E	14th Edition	Manual: CMZ 900D Gyrocompass User's Manual
89	YDK-D02-AA-18-018		Report: Yokogawa Denshikiki - Prosedure & Result Gyro Compass CMZ Type B2 IEC 61162-1/2, IEC62288, ISO8728
88	YDK-D02-AA-18-017	2018-06-11	Report: Yokogava Denshikiki - Procedure & Result Gyro Compass CMZ Type S and D - IEC 61162-1/2, IEC62288, ISO8728
87	YDK-D02-AA-17-061	issue 2	Test Procedure - Gyro compass CMZ900 Type B2 - New application "MKM029"
59	IM-MKX617-E-R0		Manual: YDK, User Manual for MKX617 Azimuth Circle
58	YDK-D02-AA-11-092		Report: YDK, Performance test report for MKX617 Azimuth Circle
57	YOK-D02-AA-11-088		Report: YDK, Additional tests for IEC 61162-1:2010 for CMZ900 series
56	MTR-504-133		Manual: YDK, MRH130-RAT Instruction Manual
55	TR11-493-E		Report: RIME, EMC tests, IEC 60945
54	TR11-496-E		Report: RIME, Vibration tests
53	TR11-498-E		Report: RIME, Rain & Spray tests
51	YDK-D02-AA-11-026_00		Report: YDK, Performance test report for MHR130 RAT, ISO 20672 and IEC 62288
49	YDK-D02-AA-11-092	1	Test Procedure CMZ900 Type S (Modify)
47	YDK-D02-AA-11-086	0	Test Procedure CMZ900 Type S (Renewal)
43	YDK-D02-AA-09-056	0	MED-B Type Examination Upgrade (Type D)
42	0706270401	June 26, 2007	Certificate of report assessment EMC test report Type D Control Box internal pilot stand

DNV GL No	Doc ref	Rev.	Description
41	0706270301	June 26, 2007	Certificate of report assessment EMC test report Type D Control Box stand alone
40	170550	2007/06/22	EMC test report Type D Control Box stand alone
39	170551	2007/06/25	EMC test report Type D Control Box internal pilot stand
38	0706270201	June 26, 2007	Certificate of report assessment EMC test CB stand alone
37	0706250501	June 26, 2007	Certificate of report assessment EMC test CB internal
36	170161	2007/06/21	EMC test report Control Box stand alone
35	170160	2007/06/20	EMC test report control box internal pilot stand
34	D02AA07001-17		Commissioning specification
33	D02AA07001-16		Product marking
32	D02AA07001-15		Software quality assurance plan
31	D02AA07001-14		Routine Testing specification
30	D02AA07001-13		Operation and installation manuals
29	D02AA07001-12		Special operational limitation if any
28	D02AA07001-11	1	Test procedure and result
27	D02AA07001-10		Quality Control
26	D02AA07001-09		Specification of enclosure material
25	D02AA07001-08		Power Supplies incl. fetails on transformers, rectifiers UPS's etc.
24	D02AA07001-07		Drawings/picture showing the MMI of all Visual Display Units and User Input Devices
23	D02AA07001-06		Description of all software modules installed
22	D02AA07001-05		List of main sotfware modules installed with name and version number
21	D02AA07001-04		Description of the pgysical and logical interface including I/Oconfiguration of sensors
20	D02AA07001-03		Drawings, functional description as necessary to describe the various parts of the equipment
19	D02AA07001-02		Drawings, Chart of system connecting wires
18	D02AA07001-01		Drawings showing the inter-relationship between all parts of the equipment including display, master compass ans repeaters
17	D02AA07005-17		Commissioning specification
16	D02AA07005-16		Product marking
15	D02AA07005-15		Software quality assurance plan
14	D02AA07005-14		Routine Testing specification
13	D02AA07005-13		Operation and installation manuals
12	D02AA07005-12		Special operational limitation if any
11	D02AA07005-11	1	Test procedure and result
10	D02AA07005-10		Quality Control
9	D02AA07005-09		Specification of enclosure material
8	D02AA07005-08		Power Supplies incl. fetails on transformers, rectifiers UPS's etc.
7	D02AA07005-07		Drawings/picture showing the MMI of all Visual Display Units and User Input Devices
6	D02AA07005-06		Description of all software modules installed
5	D02AA07005-05		List of main sotfware modules installed with name and version number
4	D02AA07005-04		Description of the pgysical and logical interface including I/O configuration of sensors
3	D02AA07005-03		Drawings, functional description as necessary to describe the various parts of the equipment

DNV GL No	Doc ref	Rev.	Description
2	D02AA07005-02		Drawings, Chart of system connecting wires
1	D02AA07005-01	1	Drawings showing the inter-relationship between all parts of the equipment including display, master compass ans repeaters

Marking of product

The name and contact address of the manufacturer and type designation of the product is to be affixed to the equipment in a clearly visible location. In addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.