

TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MERB00007UR
Revision no.:
1

This Certificate is issued by DNV UK Limited based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016 as amended.

This is to certify:

that the **Heading control system (HCS)**

with type designation(s)
Kongsberg Autopilot M100

issued to

Kongsberg Maritime AS
Kongsberg, Norway

is found to comply with the Regulation (UK) **MSN 1874 Amendment 10** for
Item no. **UK/4.16 (Row 2 of 2)**

according to the following requirements:

**SOLAS 74 Reg. V/18, SOLAS 74 Reg. V/19, IMO Res. A.342(IX), IMO Res. A.694(17), IMO Res. MSC.191(79),
IMO Res. MSC.64(67) Annex 3, IMO Res. MSC.302(87), SOLAS 74 Reg. V/18.**

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

Date of issue: **2025-10-21**

Expiry date: **2028-01-19**

DNV local unit:
Sandefjord

Approval Engineer:
Steinar Kristensen



Approved Body No.: **0097**



for **DNV UK Ltd.**

Digitally Signed By:
Christine Mydlak-Röder

Christine Mydlak-Röder
MER Service Responsible



**Maritime &
Coastguard
Agency**

UK Approved Body Authorised
by the MCA

This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.

During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved Body.

"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-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an approved body. In case limitations of use apply, these should be indicated in the Annex.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

Please see Appendix: Product Description

Application/Limitation

- The installation shall be in accordance with the manufacturers installation- and operation manuals.
- Kongsberg Autopilot M100 supports optional Course Control or Speed Control modes.
- Kongsberg Autopilot M100 has been tested for Cyber Security requirements according to DNV CS SP1 (Essential) (incorporating IACS UR E27 Ed. Sept. 2023). Cyber secure installation shall be according to DNV Type Approval Certificate TAA00003K0.

Type Examination documentation

Please see Appendix: Type Examination Documentation

Tests carried out

- | | |
|--------------------------------|---|
| • Performance testing: | ISO 11674 (2019) |
| • Environmental testing: | IEC 60945 (2002) incl. Corr.1 (2008) |
| • Presentation of information: | IEC 62288 (2021) |
| • Serial interface testing: | IEC 61162-1 (2016) and IEC 61162-2 (1998) |
| • Bridge Alert Management: | IEC 62923-1 (2018) and IEC 62923-2 (2018) |

Marking of product

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to the product. In addition the product shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.

APPENDIX

Type Examination documentation

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Document No.	Rev.	Title
DANAK-198195	1	Report: Delta, EMC and environmental test report for KM Common Operator Panels
REC-E702792	2011-04-08	Report: Delta, EMC and environmental test report for Lynx+
20216	1	Report: Applica, EMC and environmental test report for Marine Controller H1151 and Ethernet Breaker
E18116.00	00	Report: Nemko, EMC and environmental test report for Multi Purpose Input Device (MPID)
TAA00002F2	6	Certificate: DNVGL, Type Approval Certificate for PRO TOP-series power supplies
E15269.00	00	Report: Nemko, EMC and environmental test report for 8" and 12"" Maritime Panel PC
IVR-433022-1	2021-06-21	Report: Nemko, IEC 61162-1 and -2 test report for H1151 Marine Controller for HCS and TCS
TAA00000BJ	8	Certificate: DNV, TA certificate for B&R IO modules
463754-01	00	Report: Nemko, Display performance test report for PPC-120T-AL-0X
463754-02	00	Report: Nemko, Display performance test report for PPC-120T-BT-01
E22111.00	00	Report: Nemko, EMC and environmental test report for Autopilot B&R Units, KM doc no. 110-0008433A
110-0001359	C	Report: Kongsberg Maritime, Autopilot Interface tests report- HCS
110-0008716	B	Report: Kongsberg Maritime, Autopilot BAM Test Report
480326	C	Report: Kongsberg Maritime, Autopilot TA Test Report HCS - Rev C
110-0010072	A	Report: Kongsberg Maritime, Test specification and report - Command control approval for Autopilot M100
110-0019858	A	Report: Kongsberg Maritime, Autopilot M100 - Course mode tests and speed pilot demo
E21194.01	01	Report: Nemko, EMC and environmental test report for marine computer H1170 (KM art.no. 488531)
MRA000002D	2	Certificate: DNV, EU RO MAR certificate for Hatteland Series E MMC Standard and ARM CPU, Series X MMC Compact computers incl. HT 00262 OPT-Ax USB ext. module
463754-01r00	00	Report: Nemko, IEC 62288 (2021) test report for PPC-120T-AL-0X
E21172.02	02	Report: Nemko, EMC and environmental test report for Panel Computer PPC-120T-AL-0X
110-0070113	A	Manual: Kongsberg Maritime, Autopilot M100 Maintenance Manual
110-0070111	A	Manual: Kongsberg Maritime, Autopilot M100 Installation Manual
110-0070007(B)	v2.2	Manual: Kongsberg Maritime, Autopilot M100 Operator Manual

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Kongsberg Autopilot M100 Heading Control System consists of the following components:

Unit	Description	Model name	Article no	Comments
Controller	Control unit with sensor and thruster/rudder interfaces	H6059 or H1170	000110313 477531	4 x RS422 in/out 1 x CAN interface
Operator Station	Operator Panel, 12" Panel PC	DR12 or PPC-120T-AL-0X	000124787 RRM000526735	Touch screen
	Heading Wheel (Multipurpose input device)	MPID	RRM000455093	
	Alarm and Buzzer panel (Buzzer, Silence and Ack. alert panel)	COP05ALC	RRM000464627	
Network Switch	Lynx Managed Ethernet switch with routing functionality	L210-F2G-RR-V2	RRM000376790	
	Lynx Managed Ethernet switch with routing functionality	L210-F2G-MM-RR-V2	RRM000376886	
Power Supply ¹⁾	AC/ DC power supply, 240W	Pro Top 1	RRM000471072	In: 230VAC Out: 24VDC
	DC/DC Power supply 240 W	Pro Top DC	RRM000468339	In: 24VDC Out: 24VDC
Interfaces units ¹⁾	B&R Terminal block	X20TB12	000108217	
	B&R Terminal block	X20TB2105	000108230	
	B&R Bus controller	X20BC0043-10	000108227	Steering mode selector interface
	B&R Bus controller power supply	X20PS9400	000108228	
	B&R Base module for bus controller	X20BB80	000108229	
	B&R Bus module	X20BM11	000108211	
	B&R Power feed, +/-10V	X20PS4951	000114704	Power feed +/-10V
	B&R Potential distributor	X20PD0012	000113192	
	B&R Digital interface unit	X20DI6371	000111443	24VDC, 6 inputs, 2-wire, sink
	B&R Digital Interface unit	X20DI9371	000110707	24VDC, 12 inputs, 1- wire
	B&R Analogue input	X20AI4632	000110702	4 inputs, +/- 10V, 0-20 mA
	B&R Analogue input	X20AI4632-1	000117804	4 inputs, +/- 11V, 0-22 mA
	B&R Relay module	X20DO4529	000110710	4 relay outputs, 4 change over contacts 115VAC, 0.5A
	B&R Relay module	X20DO6529	000113193	6 Relay outputs
	B&R Analogue output module	X20AO4622	000108226	4 outputs, +/-10V, 0-20 mA
	B&R Analogue and Digital I/O	X20CM8281	000110712	4 DI, 2 DO, 1 AI, 1 AO
	B&R Serial interface (sensor input)	X20CS1030	000110698	2 RS422 I/O
	B&R Pulse counter	X20DC2395	RRM000247245	2 channels
	External NMEA COM Module	HT 00262 OPT-Ax USB	RRM000644018	4 x NMEA RS-422 / RS-485
SW versions	Control SW HMI SW	v2.2.x v2.2.x		

All units listed above are to be installed in a protected environment, i.e. indoor.

¹⁾ Actual configuration may vary based on requirements for individual installations. Only modules listed in certificate are approved for installation.