

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000008G
Revision No:
5

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.

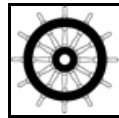
This is to certify:**That the Heading control system (HCS)**with type designation(s)
K-Pos Heading Control SystemIssued to
KONGSBERG MARITIME AS
Kongsberg, Norway

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2020/1170**,
**item No. MED/4.16. SOLAS 74 as amended, Regulations V/18 & 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)**

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

This Certificate is valid until **2021-07-17**.

Issued at **Høvik** on **2020-10-12**

DNV GL local station:
Norway Fleet in Service, East-Southfor **DNV GL AS**Approval Engineer:
Steinar KristensenNotified Body
No.: **0575****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, and amended by Decision No 1/2019 dated February 22nd, 2019.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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 300,000 USD.



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Product description

K-Pos Heading Control System consisting of the following components:

- Main processing unit (one of the following):
 - DPC Dynamic Positioning Controller with process unit(s) RCU602.
 - cC Compact Controller with process unit RCU602.
 - Operating Station/Terminal (at least one of the following):
 - K-Pos OS Operator Station for K-Pos DP/DPM/PM (including built-in versions)
 - K-Thrust OS Operator Station as part of Thruster Control (including built-in versions)
 - K-Master
 - Operator station for DP TCP Computer NEO CE-HW-01 or MC330 i3 LAN or MP5810 Base Model
 - Application server for DP MC330 i3 LAN or MP5810 Base Model
 - Main Display Server(s) MC330 i3 GPU incl USB 3.1-4xGb Ethernet or MP5810 4-display model or MP5810 NAV RoLAN model
 - Network units Moxa Ethernet Switch:
 - IKS-6728A-4GTXSFP-HV-HV-T *) or
 - EDS-316
 - USB extender Veinland USB Extender VL-66199-T/R
 - Power unit Phoenix Contact QUINT-PS/1AC/24DC/10
 - Operator interface Display 13.3" TCP, K-Master units (Heading Wheel, Joystick, Alarm Panel, I/O Controller), COP-05 Standalone Trackball
 - Main display Display 27" FHD ECDIS S MK4 or Display 27" FHD ECDIS KM05 MK4 or Display 27" FHD ECDIS G MK2 or Display 32" FHD ECDIS G MK1 or Display 55" UHD ECDIS G MK1
 - Additional display (option) MD24 16:9 ECDIS Glass
- *) Ethernet switch may be installed with modules and interfaces listed in type approval certificates TAA0000043 and TAA000006N
- cJoy OT Operator Terminal for cJoy
 - cJoy DP-OT Remote DP Operator Terminal (additional operating terminal)

Note: For details regarding approved HW see HW list in DNV GL No. 10403

- Software versions:
 - DP basis release 8.4, update 2 onwards
 - K-Master release 2.1, update 6 onwards

Applications/Limitations

- The Operating system is MS Windows 10.
- The equipment is tested according to requirements for environmental category "protected" as defined in IEC 60945.
- MC330 or MP5810 with MS Windows 10 are to be used with DP basis 8.4.x.

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Type Examination documentation

DNV GL No	Document ID	Rev.	Description
10341	MRA000000R		Certificate: DNVGL, MRA certificate for Computer NEO CE-HW-01, KM Doc. No. 415439/A
10394	MRA000000H	4	Certificate: DNVGL, MRA certificate for DuraMON 19/24/26/27/32 GLASS, KM Doc. No. 429106/D
10393	MRA000001B		Certificate: DNVGL, MRA certificate for DuraMON 55 GLASS, KM Doc. No. 426136/A
10432	MRA000002D		Certificate: DNVGL, MRA certificate for Hatteland Series E MMC Standard and Compact computers, KM Doc. No. 463254/A
10364	MRA000000S	2	Certificate: DNVGL, MRA certificate for ISIC Monitors, KM Doc. No. 421626/B
10418	TAA000002ME		Certificate: DNVGL, TA certificate for Cisco 891-24X
10419	TAA000002R1		Certificate: DNVGL, TA certificate for Cisco 892FSP
10325	TAA000000H6		Certificate: DNVGL, TA certificate for computer MP5810
10315	TAA000000FC	1	Certificate: DNVGL, TA certificate for computer NEO CE-HW-01
10344	TAA0000006K	3	Certificate: DNVGL, TA certificate for Moxa EtherDevice(TM) Switches
10402	TAA0000006N	2	Certificate: DNVGL, TA certificate for Moxa Ethernet Switches and video servers, KM Doc No. 427138/D
10343	TAA0000021N		Certificate: DNVGL, TA certificate for Moxa Ethernet Switches, KM Doc No. 355982/C
10388	TAA00000043		Certificate: DNVGL, TA certificate for Moxa IKS-6700A Series Ethernet Switches, KM Doc. No. 439028/A
10316	TAA0000006T	2	Certificate: DNVGL, TA certificate for MOXA NPort 5232-T
10417	TAA000000BM	4	Certificate: DNVGL, TA certificate for TRIO-PS-2G Series DC Power supply
10204	TAA000000M0	3	Certificate: DNVGL, TA certificate for Veinland USB extender via CAT Type VL66199-T/R
10229	TAE000014W		Certificate: DNVGL, TAE000014W, Quint-PS Series
10395	435576	A	Description: KM, Release Notes DP Basis (8.4)
10323	408744	A	Description: KM, Release Notes K-Master Basis (2.1)
10428	451148	A	Description: KM, Update Notes DP Basis 8.4.2
10430	460745	B	Description: KM, Update Notes K-Master Basis 2.1.6
10042	302199	B	Drawing: KM, General Arrangement DPC-1 / 2 Cabinet, KM Doc. No. 302199/B
10088	302152	B	Drawing: KM, General Arrangement DPC-3 Cabinet, KM Doc. No. 302152/B
10403	448540	C	Hardware list: K-Pos TA HW list for 1001-N, Doc. No. 448540/C
10333	409277	B	Hardware Module Description: KM, Computer NEO CE-HW-01
10223	348019	B	Hardware Module Description: KM, K-Master Alarm Panel
10226	348031	A	Hardware Module Description: KM, K-Master DP and IJS Joystick

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10227	348032	C	Hardware Module Description: KM, K-Master DP Joystick
10224	348024	A	Hardware Module Description: KM, K-Master Heading Wheel
10225	348029	C	Hardware Module Description: KM, K-Master I/O Controller
10228	349793	D	Hardware Module Description: KM, K-Master Touch Control Panel 13.3" HD 13T21 KMD-DR1-CORx
10311	408644	B	Hardware Module Description: KM, RCU602
10222	391204	A	Hardware Module Description: KM, USB Extender VL-66199-T/R
10275	300967	F	Interface Manual: KM, K-Pos
10332	393278	C	Maintenance Manual: KM, K-Master FWD Bridge Server Cabinet, Net A
10334	396312	C	Maintenance Manual: KM, K-Master FWD Bridge Server Cabinet, Net B
10360	423726	B	Maintenance Manual: KM, K-Master FWD Bridge Workstation MK2, Built-in
10360	423726	C	Maintenance Manual: KM, K-Master FWD Bridge Workstation MK2, Built-in
10218	387155	C	Maintenance Manual: KM, K-Master Pilot Chair
10440	462729	A	Maintenance Manual: KM, K-Master Server Cabinet MK2
10359	423725	A	Maintenance Manual: KM, K-Master Workstation MK2
10420	450174	B	Maintenance Manual: KM, MC330 Computer [ThinkStation P330 Tiny]
10384	436098	B	Operator Manual: KM, cJoy DP-OT (Release 8.4.1)
10385	436099	B	Operator Manual: KM, cJoy OT (Release 8.4.1)
10373	427893	D	Operator Manual: KM, K-Master Release 2.1.6
10386	436101	A	Operator Manual: KM, K-Pos Autopilot Mode (Release 8.4)
10396	436095	C	Operator Manual: KM, K-Pos DPM (Release 8.4.2)
10081	177332	F	Product Description: KM, Kongsberg cJoy and cPos, Compact Joystick and DP Control Systems
10259	350434	B	Product Description: KM, Kongsberg K-Master Work Station
10041	301093	B	Product Description: KM, Kongsberg K-Pos DP, Dynamic Positioning System
10407	S078A-2020	2020-05-15	Report: CSIC, EMC and environmental test report for ThinkStation P330 Tiny with i3 and i5 processors
10413	S498A-2019	2019-11-11	Report: CSIC, EMC and environmental test report for ThinkStation P330 Tiny
10406	S498A(3)-2019	2020-03-27	Report: CSIC, EMC and temperature test report for ThinkStation P330 Tiny with i7 processor
10408	S327A(1)(2)(3)(4)(5)-2020	2020-06-16	Report: CSIC, Power supply (Excessive/Extreme/Short term variations) tests for ThinkStation P330 Tiny
10046	DANAK-198632	2007-01-26	Report: DELTA, EMC and environmental test report for CAN2DP converter, KM Doc. No. 309493/A
10243	DANAK-1910979	2010-07-13	Report: DELTA, EMC and environmental test report for COP-05 Input Panel
10050	DANAK-198195	1	Report: DELTA, EMC and environmental testing of COP-05
10051	DANAK-198508	2006-10-17	Report: DELTA, EMC and environmental testing of RCU501, RSER200-4, RHUB200-5 and RMP200-8

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10054	DANAK-198637	2007-01-30	Report: DELTA, IP22 test report for KM-05
10053	DANAK-198307	1	Report: DELTA, Vibration and IP testing of DPC-3 cabinet
10045	DANAK-198577	2006-12-04	Report: DELTA, Vibration test report for KM-05 DL, MP7600, rubber isolators. KM Doc. No 308039/A
10043	DANAK-198575	2006-12-04	Report: DELTA, Vibration test report for KM-05 DL, MP7600, wire-isolators, KM Doc. No 307741/A
10044	DANAK-198576	2006-12-04	Report: DELTA, Vibration test report for MP7600 on rubber isolators in KM05 Slim line console, KM Doc. No 308038/A
10055	DANAK-198574	2006-12-04	Report: DELTA, Vibration test report for MP7600 on wire-isolators, KM Doc. No 307745/A
10020	2005-3115	01	Report: DNV, Compass Safe Distance test of Joystick and DP Equipment
10208	2011-3416	01	Report: DNV, EMC and environmental test report of HD13T21 KMD-DR1-CORP, KM Doc. No 368647/A
10021	2006-3293	01	Report: DNV, Environmental Testing of Joystick Type KM-MOD
10022	2006-3459	01	Report: DNV, IP22 test of COP-05 unit Heading Wheel
10023	2006-3460	01	Report: DNV, IP22 test of COP-05 unit: Input Panel with Tracker Ball
10335	416664	A	Report: KM, BAM interface (SW, BAM interface support)
10032	174026	D_FTR	Report: KM, DP Autopilot, I/O Test report
10030	171557	H_FTR	Report: KM, Functional Test Report, DP Autopilot
10238	391976	B_FTR	Report: KM, K-Master FWD Bridge Fallback Modes and Effects, Test Report
10239	391978	B_FTR	Report: KM, K-Pos HCS with K-Master Chair/Workstation, Test Report
10336	416665	A	Report: KM, MOXA NPort 5232-T (related to IEC 61162-1)
10328	416661	A	Report: KM, Presentation testing, IEC 62288 (2014), DP Basis 8.3.0
10329	416662	A	Report: KM, Presentation testing, IEC 62288 (2014), K-Master 2.1.0
10209	E12059.00	00	Report: Nemko no. E12059.00 (K-Master Bridge Chair), KM Doc. No 370398/A
10429	E19179.01	01	Report: Nemko, EMC and environmental test report for computer adapters (DisplayPort 1.2 to 3-Port video splitter, EX-1330M Ethernet adapter, EX-1163HM USB Hub, EX-1339HMVS USB to 8-port RS-232/422/485)
10211	E11024.03	03	Report: Nemko, EMC and environmental test report for K-Master Panel System, KM Doc. No 357261/B
10317	E15165.01	01	Report: Nemko, EMC and environmental testing of RCU602 & RMC-ST, KM Doc. No. 383971/B
10405	E17254.00	00	Report: Nemko, EMC emission tests for KM18, KM Doc. No 428578/A
10424	E20096.02	02	Report: Nemko, IEC 60945 and IACS E10 test report for USB-232-IND-HF and USB-422-IND-HF Computer Adapters, KM Doc. No 464983/C
10027	69187	2006-08-31	Report: Nemko, IP22 test of COP-05 units: ALC, BU-NAV, Utility
10026	41813	1.0	Report: Nemko, Radiated and conducted immunity tests for test cWing, cJoy, cPos

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10058	9501 029 033XX 001	2006-11-22	Report: Thales, Environmental test report for Joystick KC 06
10153	3000-14-016343	2014-03-20	Report: TI, Environmental tes report for KMX Medium-800 Console, KM Doc. No. 391795/A
10047	310-03-0319	A	Report: TI, Environmental test report for FS120, NDU and NDU Mini (Cabinet for cC-1)
10152	3000-14-015548	2014-03-12	Report: TI, Environmental test report for K-Master Pilot Chair, KM Doc. No. 391780/A
10154	3000-14-016067	2014-03-12	Report: TI, Environmental test report for KMX Pedestall 300, KM Doc. No. 391796/A
10264	3000-14-018241	2015-03-23	Report: TI, Environmental test report of cJoy OT MK3 WIN7, KM Doc. No. 401595/A
10024	3010-05-0121	2005-04-13	Report: TI, Environmental Verification Test, Additional test cWing, cJoy, cPos
10018	310-04-0125	A	Report: TI, Environmental Verification Test, cWing and cJoy
10061	3010-05-0052	2005-05-02	Report: TI, Test of KM-05 Operator Station - 650 (Slim Line)
10196	3010-09-0221	2010-01-21	Report: TI, Vibration test of K-Master Chair, KM Doc. No 368683/A
10276	100984-1	18	Statement: Hatteland, IEC 60945 compliance for K-Master 13,3" and 8" TCP's, KM Doc no 368641/D
10234	391778	A	Statement: KM, K-Master console test statement (KMX FWD Centre Console)
10235	394658	A	Statement: KM, K-Master joystick test statement (K-Master 1 and 3 button joystick)
10233	391995	B	Statement: KM, K-Master Pilot Chair test statement (K-Master Pilot Chairs)
10216	368822	B	Statement: KM, K-Master Workstation, Vibration Test Statement
10435	459234	B	System Config Manual: KM, MC330

Tests carried out

- Performance testing, ISO 11674 (2006)
- Environmental testing, IEC 60945 (2002)
- Serial interface testing, IEC 61162-1 (2016)
- Presentation testing, IEC 62288 (2014)

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.