

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB000008G
Revision No:
4

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 System

Issued to
KONGSBERG MARITIME AS
Kongsberg, Norway

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773**,
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)

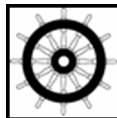
Further details of the equipment and conditions for certification are given overleaf.

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

Issued at **Høvik** on **2019-03-04**

DNV GL local station:
Sandefjord

Approval Engineer:
Roger Lauritsen



Notified Body
No.: **0575**

for **DNV GL AS**

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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



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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 supported from DP basis 8.3.3 and required for DP basis 8.4.x. RCU502 or RCU502i supported on DP basis 8.3.x)
Note: The term DPC-11 K-Pos DP Controller or DPC-21 K-Pos DP Controller is used to indicate that associated upgrade kit from SDP to K-Pos has been used. "DPC" is included in ADP701 K-Pos OS and in ADP702 K-Pos OS.
 - cC Compact Controller with process unit (RCU602 supported from DP basis 8.3.3 and required for DP basis 8.4.x. RCU502 or RCU502i supported on DP basis 8.3.x)
- Operating Station/Terminal (at least one of the following):
 - K-Pos OS Operator Station for K-Pos DP/DPM/PM (including built-in versions)
Note: The prefix SN96, KS01, KS03, KM04 or KNC620 is used to indicate that associated upgrade kit from SDP to K-Pos has been used. The terms ADP701 K-Pos OS, ADP702 K-Pos OS and SA91 OS indicate that associated upgrade kit from ADP to K-Pos has been used. The ADP701 K-Pos OS and ADP702 K-Pos OS also include the "DPC".
 - 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 MP5810 Base Model or Matrix MXE-5104 or MP8300 Base Model
 - Application server for DP MP5810 Base Model or MP8300 Base Model
 - Main Display Server(s) MP5810/MP8300 Matrox Extio Model, or MP5810 4-display model or MP5810 NAV RoLAN model
 - Network units HP 3600 El.Switch JG299A or Moxa Ethernet Switch IKS-6728A-4GTXSFP-HV-HV-T *)
 - 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 MD26 16:10 ECDIS Mk4 or MD26 16:10 ECDIS Mk4 KM05 or Display MD27 16:9 ECDIS MK3 or Display MD27 16:9 ECDIS KM05 MK3 or Display 27" FHD ECDIS S MK4 or Display 27" FHD ECDIS KM05 MK4 or Display 27" FHD ECDIS G MK1 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

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- cPos OS Operator Station
- 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 8.3, update 4 onwards or
 - DP basis release 8.4, update 0 onwards
 - K-Master release 2.1, update 3 onwards

Applications/Limitations

- The Operating system is MS Windows 10* and MS Windows 7.
- Environmental testing, IEC 60945. The equipment is tested with respect to category "protected".
- MP5810 with MS Windows 10 (i.e. not MP8300 or MP8200) to be used with DP basis 8.4.x.
 - * MS Windows 10 supported from DP basis release 8.3, update 4 onwards (require MP5810).

Type Examination documentation

DNV GL No	Description
10141	Certificate: DNV, A-12636, MP8200
10281	Certificate: DNVGL, A-13771, MP8300
10331	Certificate: DNVGL, A-13964, Network switch HP
10324	Certificate: DNVGL, MRA0000003 Rev. 1, Hatteland TFT Displays, Doc. No. 415821/A
10342	Certificate: DNVGL, MRA000000G, ISIC, Display MD26 16:10 ECDIS MK4, Doc. No. 411528/A
10394	Certificate: DNVGL, MRA000000H Rev. 2, DuraMON 19/24/26/27/32 GLASS. Doc. No. 429106/A
10400	Certificate: DNVGL, MRA000000J, DuraMON 27, Doc. No. 415186/A
10341	Certificate: DNVGL, MRA000000R, Computer NEO CE-HW-01, Doc. No. 415439/A
10364	Certificate: DNVGL, MRA000000S Rev. 2, ISIC Monitors. Doc. No. 421626/B
10393	Certificate: DNVGL, MRA000001B, DuraMON 55 GLASS. Doc. No. 426136/A
10388	Certificate: DNVGL, TAA0000043. Doc. No. 439028/A
10188	Certificate: DNVGL, TAA000005V Rev. 1, ISIC Monitors
10344	Certificate: DNVGL, TAA000006K Rev. 1, Moxa EtherDevice(TM) Switches
10402	Certificate: DNVGL, TAA000006N Rev. 1, Moxa Ethernet Switches and video servers. Doc.no. 427138
10316	Certificate: DNVGL, TAA000006T Rev. 1, covering MOXA NPort 5232-T
10315	Certificate: DNVGL, TAA00000FC, Computer NEO CE-HW-01
10325	Certificate: DNVGL, TAA00000H6, MP5810
10343	Certificate: DNVGL, TAA000021N, Moxa Ethernet Switches
10229	Certificate: DNVGL, TAE000014W, Quint-PS Series
10326	Certificate: GL 47395-12HH, MP8200
10204	Certificate: GL 61998-14HH, Veinland USB extender via CAT Type VL66199-T/R
10250	Certificate: GL 95 293-14HH, Kongsberg MP8300
10042	General Arrangement DPC-1 / 2 Cabinet, Doc. No. 302199/B
10088	General Arrangement DPC-3 Cabinet, Doc. No. 302152/B
10403	Hardware list: K-Pos TA HW list for 1001-M, Doc. No. 448540/A
10333	Hardware Module Description: Computer NEO CE-HW-01. Doc. No. 409277/B
10223	Hardware Module Description: K-Master Alarm Panel. Doc. No. 348019/B
10226	Hardware Module Description: K-Master DP and IJS Joystick. Doc. No. 348031/A
10227	Hardware Module Description: K-Master DP Joystick. Doc. No. 348032/C
10224	Hardware Module Description: K-Master Heading Wheel. Doc. No. 348024/A

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10225	Hardware Module Description: K-Master I/O Controller. Doc. No. 348029/C
10212	Hardware Module Description: K-Master Matrix MXE-5104 Computer. Doc. No. 349892/A
10228	Hardware Module Description: K-Master Touch Control Panel 13.3" HD 13T21 KMD-DR1-CORx. Doc. No. 349793/D
10311	Hardware Module Description: RCU602. Doc. No. 408644/B
10222	Hardware Module Description: USB Extender VL-66199-T/R. Doc. No. 391204/A
10276	Hatteland Statement 100984-1 rev 18 for K-Master 13,3" and 8" TCP's
10275	Interface Manual: K-Pos Interface Manual. Doc. No. 300967/E
10275	Interface Manual: K-Pos Interface Manual. Doc. No. 300967/F
10234	KM Statement: K-Master console test statement (KMX FWD Centre Console). Doc. No. 391778/A
10235	KM Statement: K-Master joystick test statement (K-Master 1 and 3 button joystick). Doc. No. 394658/A
10233	KM Statement: K-Master Pilot Chair test statement (K-Master Pilot Chairs). Doc. No. 391995/B
10216	KM Statement: K-Master Workstation, Vibration Test Statement. Doc. No. 368822/B
10166	Maintenance Manual: ADP701 K-Pos Mk3 Operator Station. Doc. No. 389470/D
10167	Maintenance Manual: ADP702 K-Pos Mk3 Operator Station. Doc. No. 389473/D
10119	Maintenance Manual: DPC-11 K-Pos DP Controller. Doc. No. 324151/F
10121	Maintenance Manual: DPC-21 K-Pos DP Controller. Doc. No. 324150/F
10332	Maintenance Manual: K-Master FWD Bridge Server Cabinet, Net A. Doc. No. 393278/C
10334	Maintenance Manual: K-Master FWD Bridge Server Cabinet, Net B. Doc. No. 396312/C
10360	Maintenance Manual: K-Master FWD Bridge Workstation MK2, Built-in. Doc. No. 423726/B
10274	Maintenance Manual: K-Master FWD Bridge Workstation. Doc. No. 398064/E
10218	Maintenance Manual: K-Master Pilot Chair. Doc. No. 387155/C
10359	Maintenance Manual: K-Master Workstation MK2. Doc. No. 423725/A
10273	Maintenance Manual: K-Master Workstation. Doc. No. 349893/I
10288	Maintenance Manual: KNC620 Operator Station K-Pos/K-Chief/General. Doc. No. 404318/D
10289	Maintenance Manual: KS01/KS03/KM04 Operator Station K-Pos/K-Chief/General. Doc. No. 404319/C
10345	Maintenance Manual: SA91 Operator Station K-Pos/K-Chief/General. Doc. No. 406430/C
10287	Maintenance Manual: SN96 Operator Station K-Pos/K-Chief/General. Doc. No. 403861/D
10290	Maintenance Manual: SN96/KS01/KS03/KM04 Built-In Operator Station K-Pos/K-Chief/General. Doc. No. 404320/D
10384	Operator Manual: cJoy DP-OT (Release 8.4). Doc. No. 436098/A
10297	Operator Manual: cJoy DP-OT, Remote DP Operator Terminal (Release 8.3.2). Doc. No. 407276/B
10385	Operator Manual: cJoy OT (Release 8.4). Doc. No. 436099/A
10294	Operator Manual: cJoy OT, Joystick System (Release 8.3.2). Doc. No. 407277/B
10397	Operator Manual: cPos (Release 8.4). Doc.No. 436097/A
10295	Operator Manual: cPos, Dynamic Positioning System (Release 8.3.2). Doc. No. 407275/B
10373	Operator Manual: K-Master Release 2.1.2. Doc. No. 427893/B
10270	Operator Manual: K-Pos Autopilot Mode (Release 8.3). Doc. No. 407279/A
10386	Operator Manual: K-Pos Autopilot Mode (Release 8.4). Doc. No. 436101/A
10396	Operator Manual: K-Pos DPM (Release 8.4). Doc. No. 436095/A
10298	Operator Manual: K-Pos DPM, Dynamic Positioning and Position Mooring System (Release 8.3.2). Doc. No. 407273/E
10390	Patch Notes for DP Basis (8.3.4.1). Doc. No. 442179/A
10391	Patch Notes for DP Basis (8.3.4.2). Doc. No. 444105/A
10081	Product Description Kongsberg cJoy and cPos, Compact Joystick and DP Control Systems. Doc. No. 177332/F
10259	Product Description Kongsberg K-Master Work Station. Doc. No. 350434/B
10041	Product Description Kongsberg K-Pos DP, Dynamic Positioning System. Doc. No. 301093/B
10395	Release Notes for DP Basis (8.4). Doc. No. 435576/A
10322	Release Notes for DP Basis 8.3.0. Doc. No. 406924/A

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10323	Release Notes for K-Master Basis (2.1). Doc. No. 408744/A
10029	Test Description: Functional test of DP Autopilot. Doc. No. 171557/H
10031	Test Description: I/O test of DP Autopilot. Doc. No. 174026/D
10243	Test Report: DELTA DANAK-1910979, Project no.: A506924-1 (COP-05 Input Panel)
10392	Test Report: DELTA DANAK-1911523 Rev. 1, Project no.: A507567 (RCU 502), Doc. No. 363084/A
10050	Test Report: DELTA DANAK-198195, Project no.: A503298-1, Rev.1 (COP-05)
10053	Test Report: DELTA DANAK-198307, Project no.: A503711 (DPC-3 cabinet)
10051	Test Report: DELTA DANAK-198508, Project no.: A503547-1 (RIO)
10055	Test Report: DELTA DANAK-198574, Project no.: A504273-2 (MP7600 on wire-isolators)
10043	Test Report: DELTA DANAK-198575, Project no.: A504273-3 (KM-05 DL, MP7600, wire-isolators)
10044	Test Report: DELTA DANAK-198576, Project no.: A504327-1 (MP7600 on rubber isolators)
10045	Test Report: DELTA DANAK-198577, Project no.: A504327-2 (KM-05 DL, MP7600, rubber isolators)
10046	Test Report: DELTA DANAK-198632, Project no.: A503547-4 (CAN2DP)
10054	Test Report: DELTA DANAK-198637, Project no.: A504352-1 (IP22 KM-05)
10020	Test Report: DNV Report No. 2005-3115 Rev.01. Compass safe distance
10021	Test Report: DNV Report No. 2006-3293 Rev.01. Envir.Testing of Joystick Type KM-MOD
10022	Test Report: DNV Report No. 2006-3459 (IP22 test of COP-05 unit: Heading Wheel)
10023	Test Report: DNV Report No. 2006-3460 (IP22 test of COP-05 unit: Input Panel with Tracker Ball)
10210	Test Report: DNV Report No. 2010-3409 Data Respons Norway, (MXE-5104 Maritime PC)
10208	Test Report: DNV Report No. 2011-3416 (HD13T21 KMD-DR1-CORP)
10030	Test Report: Functional, DP Autopilot. Doc. No. 171557/H FTR
10032	Test Report: I/O, DP Autopilot. Doc. No. 174026/D FTR
10058	Test Report: Joystick KC 06, Environmental, Thales Doc. Ident. 9501 029 033XX 001
10238	Test Report: K-Master FWD Bridge Fallback Modes and Effects. Doc. No. 391976/B FTR
10239	Test Report: K-Pos HCS with K-Master Chair/Workstation. Doc. No. 391978/B FTR
10335	Test Report: KM, BAM interface (SW, BAM interface support). Doc. No. 416664/A
10336	Test Report: KM, MOXA NPort 5232-T (related to IEC 61162-1). Doc. No. 416665/A
10328	Test Report: KM, Presentation testing, IEC 62288 (2014), DP Basis 8.3.0. Doc. No. 416661/A
10329	Test Report: KM, Presentation testing, IEC 62288 (2014), K-Master 2.1.0. Doc. No. 416662/A
10299	Test Report: Kongsberg RCU502, NMEA Driver 2.4.5 Test Report 23974
10108	Test Report: Mariner Systems, Report no. TL1582-EMC, Kongsberg MP8200
10107	Test Report: Mariner Systems, Report no. TL1582-ENV Issue 01, Kongsberg MP8200
10110	Test Report: Mariner Systems, Report no. TL1583-EMC, Kongsberg MP8200
10109	Test Report: Mariner Systems, Report no. TL1583-ENV Issue 01, Kongsberg MP8200
10179	Test Report: MS Testing, TL13074-EMC, Kongsberg MP8300 PC3
10262	Test Report: MS Testing, TL13074-ENV, Kongsberg MP8300 PC3
10240	Test Report: MS Testing, TL13075-EMC, Kongsberg MP8300 PC4
10263	Test Report: MS Testing, TL13075-ENV, Kongsberg MP8300 PC4
10246	Test Report: MS Testing, TL13130-EMC, Kongsberg MP8300 PC5
10245	Test Report: MS Testing, TL13130-ENV, Kongsberg MP8300 PC5
10199	Test Report: MS Testing, TL1672-EMC Issue 3, HP A3600 series, dated 2014.06.26
10200	Test Report: MS Testing, TL1672-ENV Issue 3, HP A3600 series, dated 2014.06.26
10197	Test Report: MS Testing, TL1673-EMC Issue 3, HP A3600 series and Fibre transmitter, dated 2014.06.26
10198	Test Report: MS Testing, TL1673-ENV Issue 3, HP A3600 series and Fibre transmitter, dated 2014.06.26
10027	Test Report: Nemko no. 69187 (IP22 test of COP-05 units: ALC, BU-NAV, Utility)
10211	Test Report: Nemko no. E11024.03 (K-Master Panel System)
10209	Test Report: Nemko no. E12059.00 (K-Master Bridge Chair)

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10317	Test Report: Nemko no. E15165.01 (RCU602 & RMC-ST). Doc. No. 383971/B
10405	Test Report: Nemko no. E17254.00, EMC test KM18
10387	Test Report: Nemko no. E18081.00 (RCU502i) Doc. No. 438685
10026	Test Report: Nemko Order no. 41813 Rev 1.0 (Additional test cWing, cJoy, cPos)
10152	Test Report: TI 3000-14-015548 Rev.- (K-Master Pilot Chair). Doc. No. 391780/A
10154	Test Report: TI 3000-14-016067 Rev.- (KMX Pedestall 300). Doc. No. 391796/A
10153	Test Report: TI 3000-14-016343 Rev.- (KMX Medium-800 Console). Doc. No. 391795/A
10264	Test Report: TI 3000-14-018241 Rev. - (cJoy OT MK3 WIN7)
10061	Test Report: TI 3010-05-0052 Rev. - (Test of KM-05 Operator Station - 650)
10024	Test Report: TI 3010-05-0121 Rev. - (Additional test cWing, cJoy, cPos)
10196	Test Report: TI 3010-09-0221 Rev.- (Vibration test of K-Master Chair)
10047	Test Report: TI 310-03-0319 Rev. A (FS120/NDU/NDU Mini) (Cabinet for cC-1)
10018	Test Report: TI 310-04-0125 Rev. A (cWing and cJoy)
10019	Test Report: TI 310-04-0270 Rev. - (cPos)
10380	Update Notes for DP Basis 8.3.4. Doc. No. 435098/A
10389	Update Notes for K-Master Basis (2.1.3). Doc. No. 440241/A
10401	Web User Documentation, 1001-M CDQM-0010 Rev M TA-KPOS-2006, 1 Maintenance manuals.

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.