

TYPE APPROVAL CERTIFICATE

This is to certify:

**That the
 Dynamic Positioning Control System
 Position Mooring Control System
 Independent Joystick Control System**

with type designation(s)
KONGSBERG cPos, K-Pos DP, K-Pos PM, K-Pos DPM, cJoy

Issued to
KONGSBERG MARITIME AS
Kongsberg, Norway

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes:

Temperature	B/A (Tested to -15°C)
Humidity	B
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules to be provided upon installation on board

Issued at **Høvik** on **2019-04-09**

for **DNV GL**

This Certificate is valid until **2021-04-08**.

DNV GL local station: **Sandefjord**

Approval Engineer: **Jens Erling Bråten**

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Jan Tore Grimsrud
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-008548-13**
Certificate No: **TAA000004C**
Revision No: **3**

Product description

The Type Approval is valid for the system type designation(s) as listed under the following groups:

DYNAMIC POSITIONING CONTROL SYSTEMS

Software version: DP basis release 8.3, update 4 onwards
DP basis release 8.4, update 0 onwards
K-Pos DP cPos

POSITION MOORING CONTROL SYSTEM

Software version: DP basis release 8.3, update 4 onwards
DP basis release 8.4, update 0 onwards
K-Pos PM

COMBINATION OF DYNAMIC POSITIONING AND POSITION MOORING

Software version: DP basis release 8.3, update 4 onwards
DP basis release 8.4, update 0 onwards
K-Pos DPM

INDEPENDENT JOYSTICK CONTROL SYSTEM

Software version: DP basis release 8.3, update 4 onwards
DP basis release 8.4, update 0 onwards
cJoy

ALTERNATIVE OPERATING STATION FOR DP AND/OR IJS

Software version: K-Master release 2.1, update 3 onwards
Software version: DP basis release 8.3, update 4 onwards
DP basis release 8.4, update 0 onwards
K-Master Work Station related to DP and/or IJS.

Additional Operating Stations/Terminals:

- cJoy DP-OT as part of cPos, K-Pos DP and K-Pos DPM.
- cWing as part of K-Pos (OS), cJoy OT (cJoy), cJoy DP-OT and cPos.

OPERATIONAL MODES AND SYSTEM FUNCTIONS

Software version: DP basis release 8.3, update 4 onwards
DP basis release 8.4, update 0 onwards

Modes:

Standby
Joystick
Auto Heading
Auto Position
Anchor Handling
Position Mooring
Auto Track (move up, low speed, high speed)
Track Line
Seismic Track
Follow Target
Dredge
Modes related to Offshore Loading

Functions:

Thruster Allocation
Power load monitoring and blackout prevention
Integration with K-Power (Kongsberg integrated energy products) (from DP basis release 8.4)
Alarm/Alert System
Display System
Chart Server Application

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Monitoring Functions
Heavy Lift
Pipelay
DP Alert
Drilling
DP Online Consequence analysis
DP Capability analysis
Motion Prediction Analysis
Econometer (from DP basis release 8.4)
Position Mooring Consequence analysis

The available modes and system functions depend on the system type and configuration.

HARDWARE:

Main processing units:

- DPC Dynamic Positioning Controller with process unit(s) (RCU602 based controller for SW 8.4.x. RCU602, RCU502i or RCU502 based controller for SW 8.3.4)
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 based controller for SW 8.4.x. RCU602, RCU502i or RCU502 based controller for SW 8.3.4)

Operating Station/Terminal:

- 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)
- cPos OS Operator Station
- cJoy OT Operator Terminal for cJoy
- cJoy DP-OT Remote DP Operator Terminal (Additional Operating Terminal)
- cWing Remote Wing Terminal
- K-Master Operating station for DP and/or Independent Joystick
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: HP3600 El.switch JG299A or Moxa 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, Utility Panel or Thruster Command 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

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Additional display (option):
IJS PC/Display:

Display 27" FHD ECDIS G MK2 or
Display 32" FHD ECDIS G MK1 or
Display 55" UHD ECDIS G MK1
For AFT WS also:
Monitor 27" TFT JH27T11 (ECDIS) MMD-AAH-
AABA
Monitor 27" TFT JH27T11 MMD-AA1- AABA
MD24 16:9 ECDIS Glass
Panel PC 8" HD 1.66GHz HD08T21 or
Panel PC 7" 5:3 J1900

*) Ethernet switch may be installed with modules and interfaces listed in type approval certificates TAA0000043 and TAA000006N

The full scope of hardware for cPos, K-Pos and cJoy is detailed in the K-Pos Hardware list, Doc. No.448540/A. Note that this also includes hardware which is covered by separate Type Approvals. For details, refer to the Test Reports and Maintenance Manuals as listed under Type Approval documentation section. Important hardware requirements are given in Release Notes and Update Notes for DP Basis and K-Master Basis.

Approval Conditions

The following documentation of the actual application is to be submitted for approval in each case:

- Reference to this Type Approval Certificate
- System block diagram
- Power supply arrangement (may be part of the System block diagram)
- List of control and monitored points
- Test program for certification and for testing at sea trials
- Failure Mode and Effect Analysis (FMEA) for systems delivered to class notations, DPS(2), DPS(3), DPS(3-CB), DPS(3-CBT), DYNPOS(AUTR), DYNPOS(AUTRO), DYNPOS(AUTRO-CB), DYNPOS(AUTRO-CBT), DYNPOS(E), DYNPOS(ER) and POSMOOR(ATAR).
- Functional description of the Consequence Analysis facility. Required for systems which have applicable rule date of 2013-07-01 onwards, delivered to class notations DPS(2), DPS(3), DPS(3-CB), DPS(3-CBT), DYNPOS(AUTR), DYNPOS(AUTRO), DYNPOS(AUTRO-CB), DYNPOS(AUTRO-CBT), DYNPOS(E), DYNPOS(ER) and POSMOOR(ATAR).

The Type Approval covers hardware and software listed under Product description.

When the type approved software is revised (affecting all future deliveries) DNV GL is to be informed by forwarding updated software version documentation. If the changes are judged to affect functionality for which rule requirements apply a new functional type test may be required and the certificate may have to be renewed to identify the new software version.

Product certificate

Each delivery of the application system is to be certified according to Pt.4 Ch.9 Sec.1. The certification test is to be performed at the manufacturer of the application system according to an approved test program before the system is shipped to the yard. After the certification the clause for application software control will be put into force.

Clause for application software control

All changes in software are to be recorded as long as the system is in use on board. The records of all changes are to be forwarded to DNV GL for evaluation and approval. Major changes in the software are to be approved before being installed in the computer.

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Application/Limitation

Note for cWing (Remote Wing Terminal):

- Location class D for temperature and C for enclosure applies.

Note for printers:

- Location class B for EMC
- Tested for radiated disturbance/emissions only
- Where only KM internal printer EMC tests are done (currently e.g. HP M254nw), documentation are to be submitted for each delivery

Type Approval documentation

- Type approval certificate for Personal Computer Kongsberg MP8300. A-13771 + GL 95293-14HH
- Type approval certificate for Personal Computer Kongsberg MP8200. A-12636 + GL 47395-12HH
- Type Approval Certificate: DNVGL TAA00000M0 Rev.3, Veinland USB extender via CAT Type VL66199-T/R
- Type Approval Certificate: A-13964 (Network switch HP)
- Type Approval Certificate: DNVGL TAA000021N Moxa Ethernet Switches
- Type Approval Certificate: DNVGL TAA000006K Rev.2 Moxa EtherDevice(TM) Switches
- Type Approval Certificate: DNVGL TAA000006T Rev.2, covering MOXA NPort 5232-T
- Type Approval Certificate: DNVGL TAA00000FC Rev.1 (DNVGL TA-Certificate for Computer NEO CE-HW-01)
- Type Approval Certificate: DNVGL TAE000014W, Quint-PS series
- Type Approval Certificate: DNVGL TAA00000H6, MP5810
- Type Approval Certificate: DNVGL TAA000005V Rev.1 (Type Approval Certificate for Display MD24 16:9 MK3 and other ISIC monitors)
- Type Approval Certificate: DNVGL TAA000006N Rev.2 (Type Approval Certificate for Ethernet Switches and Video Servers: EDS series, SPL series, SFP series, and VPort 351 series)
- Type Approval Certificate: DNVGL TAA00000BM Rev.4 (Trio-PS-26 Series)
- Type Approval Certificate: DNVGL TAA0000043 (MOXA IKS-6700A Series)
- Mutual Recognition Type Approval Certificate: DNVGL MRA0000003 Rev.2 (EU-RO-MR-TA-Certificate for Hatteland TFT Displays)
- Mutual Recognition Type Approval Certificate: PRS TE/2070/883236/15/MR (EU-RO-MR-TA-Certificate for Panel PC 7" 5:3 J1900)
- Mutual Recognition Type Approval Certificate: DNVGL MRA000000G (EU-RO-MR-TA-Certificate for Display MD26 16:10 ECDIS MK4)
- Mutual Recognition Type Approval Certificate: DNVGL MRA000000H Rev.2 (EU-RO-MR-TA-Certificate for ISIC Monitors DuraMON 19 GLASS, DuraMON 24 GLASS, DuraMON 26 GLASS, DuraMON 27 GLASS, DuraMON 32 GLASS)
- Mutual Recognition Type Approval Certificate: DNVGL MRA000000R (EU-RO-MR-TA-Certificate for Computer NEO CE-HW-01)
- Mutual Recognition Type Approval Certificate: DNVGL MRA000000S Rev.2 (EU-RO-MR-TA-Certificate for Display MD24 16:9 MK3 and other ISIC Monitors)
- Mutual Recognition Type Approval Certificate: DNVGL MRA000000J (EU-RO-MR-TA-Certificate for Display MD27 16:9 ECDIS MK3)
- Mutual Recognition Type Approval Certificate: DNVGL MRA000001B (EU-RO-MR-TA-Certificate for DuraMON 55 GLASS)
- Type Approval Assessment Report, renewal of TAA000004C Rev.2, DNV GL Sandefjord, dated 2018-12-19

Kongsberg Maritime TA-KPOS-2006 CD: CDQM-0010 Rev.M3, including:

- Operator Manual: K-Pos DP, Kongsberg K-Pos DP Dynamic Positioning System. Doc. No. 407271/D (Rel.8.3.4), and 436094/A (Rel.8.4.0)
- Operator Manual: K-Pos PM, Kongsberg K-Pos PM Position Mooring System. Doc. No. 407274/D, (Rel.8.3.4), and 436096/A (Rel.8.4.0)
- Operator Manual: K-Pos DPM, Kongsberg K-Pos DPM Dynamic Positioning and Position Mooring System. Doc. No. 407273/E, (Rel.8.3.4), and 436095/A (Rel.8.4.0)

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- Operator Manual: Auto Track Mode, Kongsberg K-Pos. Doc. No. 407281/B, (Rel.8.3.4), and 436102/A (Rel.8.4.0)
- Operator Manual: Seismic Track Mode, Kongsberg K-Pos. Doc. No. 407284/B, (Rel.8.3.4), and 436104/A (Rel.8.4.0)
- Operator Manual: Follow Target Mode, Kongsberg K-Pos. Doc. No. 407282/C, (Rel.8.3.4), and 436103/A (Rel.8.4.0)
- Operator Manual: K-Pos Offshore Loading Application Operator Manual Doc. No 407289/D, (Rel.8.3.4), and 436108/A (Rel.8.4.0)
- Operator Manual: Track Line Mode, Kongsberg K-Pos. Doc. No. 407287/B, (Rel.8.3.4), and 436106/A (Rel.8.4.0)
- Operator Manual: DP Capability and Motion Prediction Analysis, Kongsberg K-Pos. (Rel. 8.3) Doc. No. 407295/A
- Operator Manual: DP Analysis, Kongsberg K-Pos, (Rel.8.4) Doc. No. 436113/A
- Operator Manual: Backup DP System, Kongsberg K-Pos. Doc. No. 407293/A, (Rel.8.3.4), and 436111/A (Rel.8.4.0)
- Operator Manual: Alternative DP System, Kongsberg K-Pos. Doc. No. 407292/A, (Rel.8.3.4), and 436110/A (Rel.8.4.0)
- Operator Manual: Stand-alone Simulator, Kongsberg K-Pos. Doc. No. 407301/B, (Rel.8.3.4), and 436118/A (Rel.8.4.0)
- Operator Manual: Built-in Simulator, Kongsberg K-Pos. Doc. No. 407300/B, (Rel.8.3.4), and 436117/A (Rel.8.4.0)
- Operator Manual: cJoy DP-OT. Doc. No. 407276/B, (Rel.8.3.4), and 436098/A (Rel.8.4.0)
- Operator Manual: cJoy WT (cWing), Remote Wing Terminal. Doc. No. 407278/A, (Rel.8.3.4), and 436100/A (Rel.8.4.0)
- Operator Manual: cPos (OS), Dynamic Positioning System. Doc. No. 407275/B, (Rel.8.3.4), and 436097/A (Rel.8.4.0)
- Operator Manual: cJoy OT, Joystick System. Doc. No. 407277/B, (Rel.8.3.4), and 436099/A (Rel.8.4.0)
- Operator Manual: cJoy, Seismic Track Mode. Doc. No. 407286/B, (Rel.8.3.4), and 436105/A (Rel.8.4.0)
- Operator Manual: K-Master Release 2.1.2 and 2.1.3 Doc. No. 427893/B
- Operator Manual: K-Thrust 720 Operator Manual Release 4.1 (intended for K-Master 2.1.2) Doc. No. 441551/A
- Hardware Module Description: Display MD26 16:10 ECDIS MK4. Doc. No. 409543/C
- Hardware Module Description: Display MD27 16:9 ECDIS MK3. Doc. No. 415192/A
- Hardware Module Description: Display 27" FHD ECDIS S MK4. Doc. No. 445067/A
- Hardware Module Description: Display 27" FHD ECDIS KM05 MK4. Doc. No. 445069/A
- Hardware Module Description: Monitor 19.0" TFT SLIM FRAME JH 19T14 MMD-MA1-SABA and JH 19T14 MMD-MA1-SABR Doc. No. 351515/A
- Hardware Module Description: Display 27" LCD MD27 KM05 MK2 Doc. No. 384621/A
- Hardware Module Description: Display MD27 16:9 ECDIS KM05 MK3. Doc. No. 415810/A
- Hardware Module Description: Display MD24 16:9 MK3 Doc. No. 421627/A
- Hardware Module Description: Display 27" FHD ECDIS MK1. Doc. No. 425669/A
- Hardware Module Description: Display 27" FHD ECDIS G/GT MK2. Doc. No. 445079/A
- Hardware Module Description: Display 32" FHD ECDIS MK1. Doc. No. 404731/A
- Hardware Module Description: Display 55" UHD ECDIS MK1. Doc. No. 404720/A
- Hardware Module Description: K-Master Alarm Panel. Doc. No. 348019b
- Hardware Module Description: K-Master DP and IJS Joystick. Doc. No. 348031a
- Hardware Module Description: K-Master DP Joystick. Doc. No. 348032c
- Hardware Module Description: K-Master IJS Joystick. Doc. No. 358656a
- Hardware Module Description: Panel PC 8" 1.66 GHz HD 08T21. Doc. No. 388688c
- Hardware Module Description: Panel PC 7" 5:3 J1900. Doc. No. 405546/B
- Hardware Module Description: K-Master Heading Wheel. Doc. No. 348024a
- Hardware Module Description: K-Master I/O Controller. Doc. No. 348029C
- Hardware Module Description: K-Master Matrix MXE-5104 Computer. Doc. No. 349892a
- Hardware Module Description: Computer NEO CE-HW-01. Doc. No. 409277/B

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- Hardware Module Description: K-Master Touch Control Panel 13.3" HD 13T21 KMD-DR1-CORx. Doc. No. 349793d
- Hardware Module Description: K-Master Utility Panel. Doc. No. 348026a
- Hardware Module Description: Thruster Command Panel. Doc. No. 412460/B
- Hardware Module Description: USB Extender VL-66199-T/R. Doc. No. 391204a
- Hardware Module Description: RCU602. Doc. No. 408644/B
- Hardware Module Description: RCU502i. Doc. No. 429804/B
- Hardware Module Description: RCU502. Doc. No. 358190/I
- Hardware Module Description: Moxa EtherDevice Switch EDS-316 Doc. No. 352676c
- Hardware Module Description: Moxa 5-Port Unmanaged Ethernet Switch EDS-205A Doc. No. 343879b
- Hardware Module Description: Patch panel 4/8 port, CAT 6a Doc. No. 441847a
- Hardware Module Description: Patch panel 19" 24 port, CAT 6a Doc. No. 441843a
- Hardware Module Description: Moxa IKS-6726A/6728A Series Doc. No. 439059a
- Hardware Module Description: Moxa Port Interface IM-6700A Series Doc. No. 439061b
- Hardware Module Description: Moxa SFP modules Doc. No. 440212a
- Hardware Module Description: Cisco 890 Series Integrated Service Routers (for K-IMS) Doc. No. 417159b
- Maintenance Manual: SN96 Operator Station K-Pos/K-Chief/General. Doc. No. 403861d
- Maintenance Manual: KNC620 Operator Station K-Pos/K-Chief/General. Doc. No. 404318d
- Maintenance Manual: KS01/KS03/KM04 Operator Station K-Pos/K-Chief/General. Doc. No. 404319c
- Maintenance Manual: SN96/KS01/KS03/KM04 Built-In Operator Station K-Pos/K-Chief/General. Doc. No. 404320d
- Maintenance Manual: DPC-11 K-Pos DP Controller. Doc. No. 324151f
- Maintenance Manual: DPC-21 K-Pos DP Controller. Doc. No. 324150f
- Maintenance Manual: ADP701 K-Pos MK3 Operator Station. Doc. No. 389470d
- Maintenance Manual: ADP702 K-Pos MK3 Operator Station. Doc. No. 389473d
- Maintenance Manual: SA91 Operator Station K-Pos/K-Chief/General. Doc. No. 406430c
- Maintenance Manual: K-Master FWD Bridge Server Cabinet, Net A. Doc. No. 393278/C
- Maintenance Manual: K-Master FWD Bridge Server Cabinet, Net B. Doc. No. 396312/C
- Maintenance Manual: K-Master FWD Bridge Work Station. Doc. No. 398064/E
- Maintenance Manual: K-Master FWD Bridge Work Station MK2 Built-in. Doc. No. 423726/B
- Maintenance Manual: K-Master Pilot Chair. Doc. No. 387155c
- Maintenance Manual: K-Master Server Cabinet (600x1600x600). Doc. No. 359344i
- Maintenance Manual: K-Master Workstation. Doc. No. 349893i
- Maintenance Manual: K-Master Workstation MK2. Doc. No. 423725/A
- Product Description Kongsberg K-Pos DP, Dynamic Positioning System. Doc. No. 301093b
- Product Description Kongsberg K-Pos DPM, Combined Dynamic Positioning and Position Mooring System. Doc. No. 301094b
- Product Description Kongsberg cJoy and cPos, Compact Joystick and DP Control Systems. Doc. No. 177332f
- Product Description Kongsberg K-Master Work Station Doc. No. 350434b
- Interface Manual: Kongsberg K-Pos. Doc. No. 300967e + f
- K-Pos Serial Lines, Interface Specification 300966c + d
- Test Report: TI3000-14-018241 Rev.- (cJoy OT MK3)
- Test Report: DNV Report No. 2005-3115 Rev.01. Compass safe distance
- Test Report: TI 310-04-0125 Rev.A (cWing and cJoy)
- Test Report: TI 310-04-0270 Rev.- (cPos)
- Test Report: TI 3010-05-0121 Rev.- (Additional test cWing, cJoy, cPos)
- Test Report: NEMKO Order no. 32743 Rev.1, EN 60945 Corrosion Test (cWing)
- Test Report: NEMKO Order no. 41813 Rev 1.0 (Additional test cWing, cJoy, cPos)
- Test Report: TI 3010-05-0052 Rev.-, Test of KM-05 Operator Station – 650
- Test Report: DELTA DANAK-198637, Project no.: A504352-1 (IP22 KM-05)
- Test Report: DELTA DANAK-198575, Project no.: A504273-3 (KM-05 DL, MP7600, wire-isolators)
- Test Report: DELTA DANAK-198577, Project no.: A504327-2 (KM-05 DL, MP7600, rubber isolators)

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- Test Report: DELTA DANAK-198195, Project no.: A503298-1, Rev.1 (COP-05)
- Test Report: DNV Report No. 2006-3293 Rev.01. Envir. Testing of Joystick Type KM-MOD
- Test Report: Joystick KC 06, Environmental, Thales Doc. Ident. 9501 029 033XX 001
- Test Report: NEMKO no. 69187 (IP22 test of COP-05 units: ALC, BU-NAV, Utility)
- Test Report: DNV Report No. 2006-3459 (IP22 test of COP-05 unit: Heading Wheel)
- Test Report: DNV Report No. 2006-3460 (IP22 test of COP-05 unit: Input Panel with Tracker Ball)
- Test Report: DELTA DANAK-1910979, Project no.: A506924-1 (COP-05 Input Panel)
- Test Report: Kongsberg MP8200 Personal Computer, Mariner Systems Report No. TL1582-ENV Issue 01
- Test Report: Kongsberg MP8200 Personal Computer, Mariner Systems Report No. TL1582-EMC
- Test Report: Kongsberg MP8200 Personal Computer, Mariner Systems Report No. TL1583-ENV Issue 01
- Test Report: Kongsberg MP8200 Personal Computer, Mariner Systems Report No. TL1583-EMC
- Test Report: MS Testing, TL13074-EMC, Kongsberg MP8300 PC3
- Test Report: MS Testing, TL13074-ENV, Kongsberg MP8300 PC3
- Test Report: DELTA DANAK-198574, Project no.: A504273-2 (MP7600 on wire-isolators)
- Test Report: DELTA DANAK-198576, Project no.: A504327-1 (MP7600 on rubber isolators)
- Test Report: DELTA DANAK-198307, Project no.: A503711 (DPC-3 cabinet)
- Test Report: DELTA DANAK-198508, Project no.: A503547-1 (RIO)
- Test Report: DELTA DANAK-1911523 Rev.1, Project no.: A507567 (RCU502)
- Test Report: TI 310-03-0319 Rev.A (FS120/NDU/NDU Mini) (Cabinet for cC-1)
- Test Report: DELTA DANAK-198632, Project no.: A503547-4 (CAN2DP)
- Test Report: NEMKO Order no. 140487 Rev 3 (cJoy / cWing)
- Test Report: NEMKO Order no. 265317 (EMC; Lexmark CS510de)
- Test Report: NEMKO Order no. 39760 Rev 1.0 (EMC; OKI ML280 ELITE)
- Test Report: MS Testing, TL1672-EMC, Issue 3, HP A3600 series, dated 2014.06.26
- Test Report: MS Testing, TL1672 ENV, Issue 3, HP A3600 series, dated 2014.06.26
- Test Report: MS Testing, TL1673-EMC, Issue 3, HP A3600 series and Fibre transmitter, dated 2014.06.26
- Test Report: MS Testing, TL1673 ENV, Issue 3, HP A3600 series and Fibre transmitter, dated 2014.06.26
- Test Report: Applica Report No. 20468 (HD 08T21 KMC-DBG-LAQA with Cooling Fan AD0824MB-D71). Doc. No. 401536a
- Test Report: DNV Report No. 2010-3409 Data Responce Norway, (MXE-5104 Maritime PC)
- Test Report: DNV Report No. 2011-3416 (HD13T21 KMD-DR1-CORP)
- Test Report: K-Master FWD Bridge Fallback Modes and Effects. Doc. No. 391976b FTR
- Test Report: K-Pos HCS with K-Master Chair/Workstation. Doc. No. 391978b FTR
- Test Report: MS Testing, TL13075-EMC, Kongsberg MP8300 PC4
- Test Report: MS Testing, TL13075-ENV, Kongsberg MP8300 PC4
- Test Report: MS Testing, TL13130-EMC, Kongsberg MP8300 PC5
- Test Report: MS Testing, TL13130-ENV, Kongsberg MP8300 PC5
- Test Report: Nemko no. E11024.03 (K-Master Panel System)
- Test Report: Nemko no. E12059.00 (K-Master Bridge Chair)
- Test Report: TI 3000-14-015548 Rev.- (K-Master Pilot Chair). Doc. No. 391780a
- Test Report: TI 3000-14-016067 Rev.- (KMX Pedestall 300). Doc. No. 391796a
- Test Report: TI 3000-14-016343 Rev.- (KMX Medium-800 Console). Doc. No. 391795a
- Test Report: TI 3010-09-0221 Rev.- (Vibration test of K-Master Chair)
- Test Report: Nemko no. E15165.01 (RCU602 and RMC-ST). Doc. No. 383971/B
- Test Report: Nemko no. E16203.00 (Thruster Command Panel). Doc. No. E16203.00
- Test Report: KM, Presentation Testing, IEC 62288 (2014), DP Basis 8.3.0. Doc. No. 416661/A
- Test Report: KM, Presentation Testing, IEC 62288 (2014), K-Master 2.1.0. Doc. No. 416662/A
- Test Report: KM, BAM interface (SW, BAM interface support). Doc. No. 416664/A
- Test Report: KM, MOXA NPort 5232-T (related to IEC 61162-1). Doc. No. 416665/A
- Test Report: EMC test report (KM), Printer HP M254nw with netfilter, Doc. No. 445726/A
- Statement: Hatteland, 100984-1_R18 for K-Master 13,3" and 8" TCP`s Doc. No. 368641d
- Statement: KM, K-Master console test statement (KMX FWD Centre Console). Doc. No. 391778a

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- Statement: KM, K-Master joystick test statement (K-Master 1 and 3 button joystick). Doc. No. 394658a
- Statement: KM, K-Master Pilot Chair test statement (K-Master Pilot Chairs). Doc. No. 391995b
- Statement: KM, K-Master Workstation, Vibration Test Statement. Doc. No. 368822b
- General Arrangement, DPC – 3 Cabinet, Doc. No. 302152b
- General Arrangement, DPC – 1/ 2 Cabinet, Doc. No. 302199b
- Functional Test Report, K-Pos Type Approval. Doc. No. 1012070b_FTR
- Release Notes for DP Basis 8.3.0. Doc. No. 406924/A
- Release Notes for DP Basis 8.4.0. Doc. No. 435576/A
- Patch Notes for DP Basis 8.4.0.1. Doc. No. 445877/A
- Update Notes for DP Basis 8.3.4. Doc. No. 435098/A
- Patch Notes for DP Basis 8.3.4.1. Doc. No. 442179/A
- Patch Notes for DP Basis 8.3.4.2. Doc. No. 444105/A
- Release Notes for K-Master Basis (2.1). Doc. No. 408744/A
- Update Notes for K-Master Basis (2.1.3). Doc. No. 440241/A
- K-Pos Hardware List 1001-M (Rev. A). Doc. No. 448540/A

Software: Release Notes for DP Basis 8.4 and Update Notes for DP Basis 8.3.4 (listed above)
Update Notes for K-Master Basis 2.1.3 (listed above)

Hardware: The full scope of hardware for cPos, K-Pos and cJoy is detailed in the K-Pos Hardware list (see above). Note that this also includes hardware which is covered by separate Type Approvals. For details, refer to the Test Reports and Maintenance Manuals as listed under Type Approval documentation section above. Important hardware requirements are given in Release Notes and Update Notes for DP Basis and K-Master Basis.

Places of manufacture

- Kongsberg Maritime AS, Kongsberg, Norway
- Kongsberg Maritime AS, Horten, Norway
- Kongsberg Maritime AS, Sandefjord, Norway
- Kongsberg Maritime Inc., New Orleans, USA
- Kongsberg Maritime China Waigaoqiao Ltd., 2F/3F, No. 136 North Fute Road, China (Shanghai) Pilot Free Trade Zone, Shanghai, China
- Kongsberg Maritime Korea Ltd., Busan, Korea
- Kongsberg Maritime Pte. Ltd., Singapore, Singapore

Tests carried out

Applicable tests according to:

- Standard for Certification 2.4 (April 2006)
- Class Guideline DNVGL-CG-0339, Environmental test specification for electrical, electronic and programmable equipment and systems, edition November 2016.

Job Id: **262.1-008548-13**
Certificate No: **TAA000004C**
Revision No: **3**

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.

The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed at renewal of this certificate.