



Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	Kongsberg Maritime AS
Address	Kirkegårdveien 45, Kongsberg, 3616, Norway
Place of Production	Kongsberg Maritime, Inc. 200 James Drive West, St. Rose, Louisiana, 70087, United States
Place of Production	Kongsberg Maritime Korea Ltd ,Kijang-gun, 1058-7, Dalsan-ri,, Jungkwan-myun,, Busan, 46027, South Korea
Place of Production	Kongsberg Maritime AS Bekkajordet 8a, Horten, 3194, Norway
Place of Production	Kongsberg Maritime Pte Ltd No 6,,Tuas Drive 1, Singapore, 638673, Singapore
Place of Production	Kongsberg Maritime China Ltd. No. 136 North Fute Road, Pilot Free Trade Zone, Shanghai, 200131, China
Type	Control Systems
Description	Dynamic Positioning Control System (K-Pos DP) Position Mooring Control System (K-Pos PM) Combination of Dynamic Positioning and Position Mooring (K-Pos DPM)

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Type Approval Certificate

Independent Joystick Control System (cJoy)

Trade Name

Kongsberg K-Pos DP, K-Pos PM, K-Pos DPM, cJoy

Application

Marine and Offshore applications for use in environmental categories ENV2, ENV3 and ENV5, as defined in Lloyd's Register Type Approval System, Test Specification Number 1 – December 2021.
Manufacturer's specification

Specified Standard

IACS UR E27 Rev. 1 / 2023 and Part 6, Chapter 1, Section 2.16 Rules and Regulations (July 2024)
IACS UR E10 Rev. 9 / 2023 and Lloyd's Register Testspecification No.1

Additional Tests

EN 60945 (2002) Acoustic Noise <60dBA at ad istance of 1m
EN 60945 (2002), EN 60533 (1999), EN ISO 694 (2001) Compass SafeDistance
IEC 60529 (2001-02) IP22-KM-05 Deep line and Slim line operator stations
IEC 60529 (2001) Ed. 2.1 IP42-KM-MOD joystick
IEC 60529: 1989-11+A1 :1999 IP22-COP ALC, COP ALC-NA V & COP UTILITY operator panels
EN 60529(1991)and EN 60529/ A1 (1991)IP22 - headingwheel 6200461
EN 60529 (1991) and EN 60529/ A 1 (2000) IP22- tracker ball 6200463
EN 60529 (2001) IP2X- tracker ball standalone panel
IEC 60945 (2002), IEC61000-4-3 (2006),IEC60068-2-27 - ISIC Displays MD 22 Mk2, MD 24 Mk2 & MD 27 Mk2
IEC 60945 (2002), IEC61000-4-3 (2006),IEC60068-2-27 IP2X-ISIC Displays MD 27 KM-05 Mk2

Other Conditions

For systems consisting of the listed components the final functional arrangement and application software are to comply with appropriate Lloyd's Register Rules and Regulations and shall be subject to project related Plan Approval Process, when installed on LR classed vessels. Documents and drawings for the actual application are to be provided according relevant LR

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Rules and Regulations.

Type Approval does not eliminate the need for any survey, required by the Rules and Regulations.

Compliance with IACS UR E27 Rev. 1/ 2023 and/or Part 6, Chapter 1, Section 2.16 Rules and Regulations (July 2024):

The compliance with the requirements above is issued with the limitation that the directly connected networks are “trust networks” (according to the definition IEC 62443-3-3 Item 3.1.45).

It is further issued on the understanding that all connections are wired. Any radiocommunication (e.g. Bluetooth, WiFi etc.) are excluded.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: 13/00047 (E1)

The Design Appraisal Document HPC2462007-24/TM and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Appendix

Software Versions

K-Pos DP	DP basis release 8.5 update, 0 and onwards
K-Pos PM	DP basis release 8.5 update, 0 and onwards
K-Pos DPM	DP basis release 8.5 update, 0 and onwards
cJoy	DP basis release 8.5 update, 0 and onwards

Hardware configuration

- Main processing units
 - DPC Dynamic Positioning Controller with process unit(s).
 - cC Compact Controller with process unit.
- Operating Stations/Terminals
 - 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)
 - cJoy OT Operator Terminal for cJoy
 - cJoy DP-OT Remote DP Operator Terminal (Additional Operating Terminal)
 - cWing Remote Wing Terminal

Modes and Applications

- DP modes and Applications
 - Standby mode,
 - Joystick mode (incl. Mixed mode / Auto Heading mode),
 - Auto Position mode,
 - Autopilot mode,
 - Auto Track mode,
 - Follow Target mode,
 - Seismic Track mode,
 - Track Line mode,
 - DP Offshore Loading Application with modes,
 - Drilling Application,
 - Pipelaying Application,
 - Heavy Lift Application,
 - DP Status Application.
 - PM modes
 - Standby mode,
 - Anchor Handling mode,
 - Position Mooring mode.
 - cJoy modes
 - Standby mode,
 - Joystick mode (incl. Mixed mode / Auto Heading mode),
 - Station Keeping mode,
 - Autopilot mode.
- Available configurations: DP-1X, DP-2X, DP-3X.

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

Module	Description	Additional Test	Compass Safe Distance
Terminal	cJoy Operator Terminal, Mk4	IP20 ⁽¹⁾	500 mm
	cWing Mk3 Built-in	IP20 ⁽¹⁾	700 mm
	cWing Mk3 Portable	IP56 ⁽¹⁾	700 mm
	MC340 Computer	-	980 mm / 620 mm ⁽³⁾
Display	MC360 Computer	-	980 mm / 620 mm ⁽³⁾
	Display 15" FHD XT MK1	IP44 ⁽¹⁾ / -15°C	1100 mm
	Display 22" FHD X MK1	IP56 ⁽¹⁾ /-15°C	1850 mm
	Display 24" FHD XE MK1	IP56 ⁽¹⁾ / -15°C	2050 mm
	Display 27" FHD XE MK2	IP44 ⁽¹⁾ / -15°C	190 mm
	Display 32" FHD ECDIS G MK1	IP56 ⁽¹⁾ / -15°C	2650 mm
	Display 32" Full HD 16:9 ECDIS	IP56 ⁽¹⁾ / -15°C	180 mm
	Display 55" UHD ECDIS G MK1	IP20 ⁽¹⁾ / -15°C	5600 mm
Computer	Display 55" Ultra HD, 16:9, ECDIS	IP44 ⁽¹⁾ /-15°C	2400 mm
	Computer MC340 i3 LAN	IP20 ⁽¹⁾	150 mm
Controller	Computer MC360 i3 LAN	IP20 ⁽¹⁾	750 mm
	RCU601	-	300 mm
Accessories	RCU602	-	300 mm
	RCU502i	-	300 mm
	USB Extender VL66298 Receiver	-	-
	USB Extender VL66298 Transmitter	-	-
	USB to 4 x RS232 DB9M	-	-
	Adapter USB to 1 serial RS232	IP20 ⁽¹⁾	100 mm
	Adapter USB to 1 serial RS422	IP20 ⁽¹⁾	100 mm
	L2C module 404654	IP20 ⁽¹⁾	100 mm
Panel Module	Serial Splitter NPort 5232-T	-	400 mm
	Earth Fault Indicator 16 A – EFI-16	-	500 mm
	Panel ALC	IP20 ⁽¹⁾ /-15°C	300 mm
	Panel BU DP	IP20 ⁽¹⁾ /-15°C	250 mm
	Panel Input Mk2 COP 05	IP20 ⁽¹⁾ /-15°C	350 mm
	Panel Input Mk3 COP 05	IP20 ⁽¹⁾ /-15°C	200 mm
	Heading Wheel COP05	IP20 ⁽¹⁾ /-15°C	200 mm
	Joystick KC 06-K	IP56	100 mm
Junction Box	Tracker Ball Standalone Panel	IP20 ⁽¹⁾ /-15°C	470 mm
	cJoy OT JB MK3 w/5m cable	IP20 ⁽¹⁾	500 mm
	cJoy OT JB MK3 w/15m cable	IP20 ⁽¹⁾	500 mm
Network Module	cWing Junction Box for WT	IP56 ⁽¹⁾	300 mm
	Switch DIN EDS-205A	-	600 mm
	Switch DIN EDS-208A	-	600 mm
	Switch DIN EDS-208A	-	600 mm
	Switch DIN EDS-316	-	600 mm
	Router DIN EDR-8010-2GSFP	-	400 mm
	Switch DIN EDS-408A	-	600 mm
	Switch DIN EDS-518E-4GTXSFP	-	600 mm
	Switch Cisco C1000-24T-4G-L	IP20 ⁽¹⁾	240 mm
	Switch Cisco C1000-24T-4X-L	IP20 ⁽¹⁾	240 mm
	Switch IKS-6728A 382427	-	5000 mm
	Switch IKS-6726A	-	5000 mm
	Router Cisco C1121X-8P	IP20 ⁽¹⁾	170 mm
Router Cisco C891-24X/K9	-	5000 mm	



Module	Description	Additional Test	Compass Safe Distance
Power Supply	Fortinet FGR-60F	-	500 mm /300 mm ³⁾
	Power PRO TOP1 240W 24V 10A	IP20 ¹⁾	700 mm
	Power PRO TOP1 120W 24V 5A	IP20 ¹⁾	700 mm
	Power Quint - PS/1AC/24V/5A	-	-
	Power Quint - PS/1AC/24V/10A	-	-
I/O Module	Power, TRIO-PS- 2G/1AC/24DC/5/B+D	-	300 mm
	RHUB200-5 Module	IP20 ¹⁾	300 mm
	RMP200 - 8 Module	IP20 ¹⁾	50 mm
	RMP201-8 Module	IP20 ¹⁾	50 mm
	RSER200-4 Module	IP20 ¹⁾	50 mm
Printer	RHUB200-5	-	50 mm
	Digital Printer	-	-
	A4 Lexmark CS521dn for Bridge (w/Line filter)	-	-
	Printer A4 CS431dw for Bridge	-	-

1) Degree of protection 2) Low Temperature Test 3) Compass Safe Distance Navigation Equipment

