



TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA00002DT
Revision No:
2

This is to certify:

that the **Hardware Platform for the Remote Control System, Propulsion, Thruster and Steering**

with type designation(s)
Mcon

issued to

Kongsberg Maritime AS
Kongsberg, Norway

is found to comply with

DNV 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.

Location classes are listed in the certificate.

Issued at **Høvik** on **2026-10-09**

This Certificate is valid until **2031-10-08**.

DNV local unit: **Alesund**

Approval Engineer: **Sonali Marathe**



for **DNV**

This document has been digitally signed and will
therefore not have handwritten signature

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.

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

This Type Approval covers hardware components for the Kongsberg Maritime Mcon Propulsion, thruster and steering gear control (PTSC) system.

The Mcon Propulsion, thruster and steering gear control (PTSC) system is a processor-based system for controlling the thrust units of the vessel. I.e., controlling thrusters (Tunnel Thrusters or Azimuth thrusters), main propellers and rudders.

Location classes in the table below are denoted in the following sequence:

Temperature / Humidity / Vibration / EMC / Enclosure class

Where temperature is denoted as "***", then the module is tested to low temperature -15°C.

Where enclosure class is denoted as "***", required enclosure protection according to the rules to be provided upon installation onboard.

Products without a DNV Type Approval certificate are indicated by "#" in the "DNV reference" column, are subject to periodical assessment. Additional information regarding the products and/or manufacturers is provided in Document 110-0172125 and is to be used as a reference during the audit.

Products with a DNV Type Approval certificate will be audited under their respective certificates.

Mcon Hardware:

Module type	Product Description	KM Item ID	Location Classes	Compass Safe Distance	DNV reference
Lever (Kwant G2 & G3)	Main propulsion, single, fwd	000114574	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Main propulsion, single, aft	000122040	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Main propulsion, double, fwd	000114575	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Main propulsion, double, aft	000114576	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Main propulsion, single, fwd, motorized	000122041	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Main propulsion, single, aft, motorized	000122042	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Main propulsion, double, fwd, motorized	000122043	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Main propulsion, double, aft, motorized	000122044	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Main propulsion, single pitch/RPM, ECR	RRM000353541	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Main propulsion, single pitch/RPM, ECR, motorized	RRM000357317	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Main propulsion, single pitch/RPM, fwd, motorized	RRM000480571	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Main propulsion, single pitch/RPM, aft, motorized	RRM000480573	B/B/A/B/A	300 mm	# DNV ID 28, 29, 94
	Tunnel thruster, double	000104154	B/B/A/B/A	300 mm	# DNV ID 3,13, 94
	Tunnel thruster, double, motorized	000104155	B/B/A/B/A	300 mm	# DNV ID 3,13, 94
	Tunnel thruster, single	000104156	B/B/A/B/A	300 mm	# DNV ID 3,13, 94

Module type	Product Description	KM Item ID	Location Classes	Compass Safe Distance	DNV reference
	Tunnel thruster, single, motorized	000104157	B/B/A/B/A	300 mm	# DNV ID 3,13, 94
	Rudder Tiller (50- 0- 50)	000104162	B/B/A/B/A	300 mm	# DNV ID 5, 12, 94
	Rudder Tiller (70- 0- 70)	000112159	B/B/A/B/A	300 mm	# DNV ID 5, 12, 94
	Helmsman Lever (50- 0- 50)	000110624	B/B/A/B/A	300 mm	# DNV ID 5, 12, 94
	Rudder Tiller (45- 0- 45), with lever, no buttons	RRM000460995	B/B/A/B/A	300 mm	# DNV ID 5, 12, 94
	Azimuth CP, aft	000104146	B/B/A/B/A	300 mm	# DNV ID 4, 11, 94
	Azimuth CP, fwd	000104147	B/B/A/B/A	300 mm	# DNV ID 4, 11, 94
	Azimuth CP, motorized, aft	000104148	B/B/A/B/A	300 mm	# DNV ID 4, 11, 94
	Azimuth CP, motorized, fwd	000104149	B/B/A/B/A	300 mm	# DNV ID 4, 11, 94
	Azimuth CP, motorized, fwd, without scale numbering	000125251	B/B/A/B/A	300 mm	# DNV ID 4, 11, 94
	Azimuth FP, aft	000104150	B/B/A/B/A	300 mm	# DNV ID 4, 11, 94
	Azimuth FP, fwd	000104151	B/B/A/B/A	300 mm	# DNV ID 4, 11, 94
	Azimuth FP, motorized, aft	000104152	B/B/A/B/A	300 mm	# DNV ID 4, 11, 94
	Azimuth FP, motorized, fwd	000104153	B/B/A/B/A	300 mm	# DNV ID 4, 11, 94
	Azimuth FP, scale 0-10-0-10	RRM000377686	B/B/A/B/A	300 mm	# DNV ID 4, 11, 94
	Azimuth FP, motorized, scale 0-10-0-10	RRM000377687	B/B/A/B/A	300 mm	# DNV ID 4, 11, 94
	Main propulsion single, G3	RRM000385830	B/B/A/B/A	100 mm	# DNV ID 79, 85, 93
	Main propulsion double, G3	RRM000385831	B/B/A/B/A	100 mm	# DNV ID 79, 85, 93
	Tunnel thruster single, G3	RRM000385832	B/B/A/B/A	100 mm	# DNV ID 79, 85, 93
	Tunnel thruster double, G3	RRM000385833	B/B/A/B/A	100 mm	# DNV ID 79, 85, 93
	Azimuth, G3	RRM000385835	B/B/A/B/A	100 mm	# DNV ID 79, 85, 93
	Azimuth, limited +/-60 degrees	RRM000385836	B/B/A/B/A	100 mm	# DNV ID 79, 85, 93
Levers (K-Thrust 720)	Azimuth Lever with display	405846	B*/B/A/B/A	1000 mm	TAA0000017
	Azimuth Lever	416533	B*/B/A/B/A	1000 mm	TAA0000017

Module type	Product Description	KM Item ID	Location Classes	Compass Safe Distance	DNV reference
	Single Lever with display	405842	B*/B/A/B/A	1300 mm	TAA0000017
	Single Lever	416531	B*/B/A/B/A	200 mm	TAA0000017
	Dual Lever with display	405844	B*/B/A/B/A	1300 mm	TAA0000017
	Dual Lever	416532	B*/B/A/B/A	200 mm	TAA0000017
	Lever display	416534	B*/B/A/B/A	1100 mm	TAA0000017
	Lever display - IP56	110-0122634	D/B/A/B/A	Standard: 1100 mm Steering: 800 mm	# TAA00003DA
Mini Wheel (K-Thrust 720)	Mini Wheel with display	412364	B*/B/A/B/A	1000 mm	TAA0000017
	Mini Wheel	417835	B*/B/A/B/A	1000 mm	TAA0000017
Levers AQP	XD,AZM,CP,Dual out.M	110-0153617	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,FP1,Single out.M	110-0153622	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,FP3,Single out.DET5	110-0153625	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,CP,Dual out.	110-0153614	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,FP2,Dual out.M	110-0153624	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,FP1,Dual out.	110-0153619	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,FP1,mA	110-0153628	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,FP1,Single out.	110-0153613	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,CP,Single out.M	110-0153616	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,FP1,Dual out.M	110-0153621	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,CP,mA, Single out.	110-0153627	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,CP,Single out.	110-0153618	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,FP2,Dual out.	110-0153615		Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,FP2,Single out.	110-0153620	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,FP2,Single out.M	110-0153623	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
	XD,AZM,FP2,mA	110-0153629	D/B/A/B/A	Standard: 550 mm Steering: 350 mm	TAA00003R8
Joystick	G2 Combined Joystick & Positioning	000104163 000117270	B/B/A/B/A	300 mm	# DNV ID 10, 60, 113
	G1 Joystick device	000102277	B/B/A/B/A	-	# DNV ID 138, 139, 140
	G1 Positioning device	000102278	B/B/A/B/A	-	# DNV ID 120, 141

Module type	Product Description	KM Item ID	Location Classes	Compass Safe Distance	DNV reference
Operator Panels	Steering gear panel - pump control	000117799	D/B/A/B/A	100 mm	# DNV ID 67, 78, 95
	Steering gear panel - NFU control, fwd	000117800	D/B/A/B/A	100 mm	# DNV ID 67, 78, 95
	Steering gear panel - NFU control, aft	000117801	D/B/A/B/A	100 mm	# DNV ID 67, 78, 95
	MMS panel autocrossing	000126062	D/B/A/B/A	100 mm	# DNV ID 67, 77, 95
	MMS panel autocrossing, DP mode	000127586	D/B/A/B/A	100 mm	# DNV ID 67, 77, 95
	MMS panel autocrossing, Autodocking mode	RRM000413829	D/B/A/B/A	100 mm	# DNV ID 67, 77, 95
	MMS panel autocrossing, JS mode	RRM000438977	D/B/A/B/A	100 mm	# DNV ID 67, 77, 95
	CAN RailModule	000117803	D/B/A/B/A	100 mm	# DNV ID 67, 76, 95
	Thruster Command Panel - IP56	110-0122573	D/B/A/B/A	Standard: 1200 mm Steering: 700 mm	# TAA00003DA
	COP05 ALC Stand Alone	391890 (RRM000464627)	B*/B/A/B/A	Standard: 400 mm Steering: 250 mm	TAA00003E3
	PSI-REP-DNET CAN repeater (extender)	RRM000272777	B/A/A/B/**	-	TAA00001KR
	Push Button 4 (PB4)	400992 RRM000477379	D/B/B/B/B	200 mm	TAA0000017
	Push Button 4 (PB4) Momentary	110-0033305	B/B/A/-/**		# TAA00003DA
	Push Button 6 - PB6 USB	110-0060620	B*/B/A/B/A	Standard: 400 mm Steering: 300 mm	TAA0000017
	LAN to CAN Gateway – L2C	404654	D/B/B/B/**	100 mm	TAA0000017
Controller	H1151.6059, Marine Controller	466764 000110313	B*/B/A/B/A	250 mm	TAA00002DS
	H1170, Marine Controller	488531 RRM000471733	B*/B/A/B/A	100 mm	TAA00002DS
	H1170 Mk2, Marine Controller	RRM000691907	B*/B/A/B/A	100 mm	# DNV ID 150 + TAA00002DS
	Micro Marine Controller MMC11	000124868	C/B/A/B/**	-	TAA00000FK
	RCU801	110-0060198	B*/B/A/B/A	Standard: 200 mm	# TAA00003DA
Operator Stations	PANEL COMPUTER 10.4"	RRM000603363 RRM000483816	D/B/A/B/A	1000 mm	TAA00001UU
	12 INCH PANEL COMPUTER	000124787	B*/B/A/B/A	650 mm	TAA00000EY
	8 inch panel computer	000123971	B*/B/A/B/A	700 mm	TAA00000EY
	Panel PC 12" PPC-120T-RL-02	KM TC: 110-0134079	D/B/A/B/A	Standard: 1200 mm Steering: 750 mm	TAA00003MJ

Module type	Product Description	KM Item ID	Location Classes	Compass Safe Distance	DNV reference
		CM TC: RRM000765204			
	MC360 Computer [ThinkStation P360 Tiny]	110-0016255 110-0016256 110-0016257 110-0016258 110-0016259 110-0016260 110-0024558	D/B/A/B/A	Standard: 750 mm Steering: 550 mm	TAA000038U
	MC380 Computer [Thinkstation P3 Tiny] U5 LAN	110-0119632	D/B/A/B/A	Standard: 750 mm Steering: 550 mm	TAA00003SE
IO modules	RRRLY8, Relay card	72776	D/B/A/B/**	-	# DNV ID 126, 136, 137, 142, 147
	RRDIO15, IO module with max 15 channels digital input and output capability	RRM000503900	D/B/A/B/**	-	# DNV ID 126, 136, 137, 142, 147
	RRAIO16, IO module with configurable channels.	RRM000503899	D/B/A/B/**	-	# DNV ID 126, 136, 137, 142, 147
	Remote Multi Purpose IO Module - RMP830-32	110-0025568	B*/B/A/B/A	Standard: 200 mm Steering: 100 mm	# TAA00003DA
Terminal Carrier (backboards)	Dual process network interface TC-RCUMP830AC-32/4R	494168	B*/B/A/B/A	Standard: 300 mm Steering: 200 mm	# TAA00003DA
	Dual CANopen interface TC-RMP830-32	494163	B*/B/A/B/A	Standard: 200 mm Steering: 100 mm	# TAA00003DA
Serial interfaces	HT 00262 OPT-B1	KM TC: 110- 0156354 CM TC: RRM000791446	A*/B/A/B/A	-	# DNV ID 152,153
Network devices	8-port switch, 8xRJ45	RRM000376790	D/B/A/B/A	150 mm	TAA000000R
	8+2-port switch, 8xRJ45, 2xLC	RRM000376886	D/B/A/B/A	150 mm	TAA000000R
	Moxa EDS-405A Series	455729	D/B/A/B/**	Standard: 500 mm Steering: 600 mm	TAA000006K
	Moxa EDS-408A Series EDS-408A-MM-SC EDS-408A-3M-SC	467615 450144 464916	D/B/A/B/**	600 mm	TAA000006N
	Moxa IKS-6728A series	382427	D/B/A/B/**	500 mm	TAA0000043
	Cisco C1000-24T-4X-L	110-0001617	D/B/A/B/A	2400 mm	TAA000035N
	Cisco C1000-24FP-4G-L	110-0009583 469123	D/B/A/B/A	2400 mm	TAA000035N
	Cisco C1000-24T-4G-L	469125	D/B/A/B/A	2400 mm	TAA000035N
	Cisco C1000-24P-4G-L	492517	D/B/A/B/A	2400 mm	TAA000035N
	Fortinet FGR-60F	110-0020955	D/B/A/B/A	450 mm	TAA000035M
	Fortinet HN FS-124F (1GB switch)	110-0096228	D/B/A/B/A	Standard: 700 mm Steering: 500 mm	TAA00003VA

Module type	Product Description	KM Item ID	Location Classes	Compass Safe Distance	DNV reference
	Moxa EDR-8010 series EDR-8010-2GSFP EDR-8010-VPN-2GSFP	110-0061800 110-0061801	D/B/A/B/**	Standard: 400 mm Steering: 300 mm	TAA00003B9
	Moxa EDR-9010 series EDR-G9010-VPN-2MGSFP	110-0113920	D/B/A/B/A	Standard: 450 mm Steering: 350 mm	TAA000031W

Place of manufacture

Manufacturer listed herein apply solely to products without a DNV Type Approval. Please refer "Product description" section for details.

Kongsberg Maritime AS Avd Longva

Longvafjordvegen 379, 6293 Longva, Norway

Approval conditions

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case. Reference is made to DNV rules for classification of ships Pt.4 Ch.9 Control and monitoring systems.

Product certificate

If specified in the Rules, ref. Pt.4 Ch.9 Sec.1, the control and monitoring system in which the above listed hardware is used shall be delivered with a product certificate. For each such delivery the certification test is to be performed at the manufacturer of the application system before the system is shipped to the yard. The test shall be done according to an approved test program. After certification the clause for software control will be put into force.

Software control

All changes in software are to be recorded as long as the system is in use on board. Documentation of major changes is to be forwarded to DNV for evaluation and approval before implemented on board. Certification of modified functionality may be required for the particular vessel.

Type Approval documentation

DNV No.	Document ID	Rev.	Description
140	CCP-191008-01TT	A	Datasheet - Operator Device, DP/JS Joystick device
141	CCP-191009-01TT	A	Datasheet - Operator Device, DP/JS Position device
10	CCP-191018-01TT	C	Datasheet - DP Joystick
11	CCP-191021-01TT	J	Datasheet - Azimuth
12	CCP-191022-01TT	E	Datasheet - Rudder Tiller
13	CCP-191023-01TT	D	Datasheet - Side Thruster
28	CCP-191024-02TT	E	Datasheet - Main Propulsion
79	CCP-191030-01TT	C	Datasheet - G3 Propulsion lever
77	CCP-192004-03TT	D	Datasheet - MMS Panel
78	CCP-192005-01TT	C	Datasheet - Steering gear panel
76	CCP-140006-01TT	C	Datasheet - CAN controller, rail module
136	DMN805-071	P	Datasheet - Circuit Board RRIO
152	110-0156370/Pro01	00_01	Datasheet - HT 00262 OPT-B1
126	110-0114981	A	Product brochure - RIO800 system
3	9505 331 695XX 001	00.010	Test report - Thales, CCP 191023, Double & Single Tunnel Thruster G2
4	9505 331 697XX 001	00.012	Test report - Thales, CCP 191021, Azimuth Thruster G2
29	9505 331 698XX 001	00.004	Test report - Thales, CCP 191024, Double & Single Main Thruster G2
5	9505 331 699XX 001	00.002	Test report - Thales, CCP 191022, Rudder Tiller G2
60	9505 332 597XX 001	00.007	Test report - Thales, CCP 191018, Joystick G2
85	0026 H0203 2020062206A	01.0	Test report - Thales, CCP 191030, G3 Propulsion lever
93	0026 H0203 2020062206B	01.0	Test report - Thales, CCP 191032, G3 Propulsion lever
67	0026 H0203 0000089130	00.5	Test report - Thales, CCP 192004 -192005, 140006, CAN Bridge & Button Panel
120	9505 333 131XX 001	00.006	Test report - Thales, Operator Device, DP/JS Position device (G1)
139	9505 333 130XX 001	00.006	Test report - Thales, DP/JS Joystick device G1
137	REP013109	A	Test report - Nemko, RRRLY8, RRDIO15, RRAIO16
142	2006-3165	01	Test report - DNV, RRRLY8, RRDIO15 and RRAIO16
147	2005-3233	04	Test report - DNV, RRRLY8, RRDIO15 and RRAIO16
153	230705003T	1	CAL Report - HT 00262 OPT-B1 (ES1)
94	0026 H0203 0000213260	00	Supplementary EMC test report - Thales, CCP 191018–191024
95	0026 H0203 0000213312	00	Supplementary EMC test report - Thales, CCP 192004, 192005, 140006
113	0026 H0203 0000298081	00	Supplementary EMC test report - Thales, CCP 191018, G2 DP Joystick
138	0026 H0203 0000213272	00	Supplementary EMC test report - Thales, DP/JS Joystick device G1
150	H1170	2.0	H1170_EOL component replacement test report

Document 110-0172125 Rev.B - Manoeuvring Control TA Additional HW assets dated 2026-09-30

Assessment report, Ålesund dated 2026-09-14

Tests carried out

Applicable tests according to class guideline DNV-CG-0339, August 2021.

Applicable tests according to IACS Unified Requirements E10 rev. 9 have been verified.

For the bridge mounted components the 'Compass safe distance' was measured according to section 11.2 of IEC 60945 4th edition (2002).

Marking of product

The products to be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

For details regarding assessment, please refer "Product description" section.

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 after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE