



CERTIFICATE NUMBER
EFFECTIVE DATE
EXPIRY DATE
ABS TECHNICAL OFFICE

25-0183812-PDA
20-Aug-2025
19-Aug-2030
London Engineering Department

CERTIFICATE OF

Product Design Assessment

This is to certify that a representative of this Bureau did, at the request of

KONGSBERG MARITIME AS

located at

POSTBOKS 483, , KONGSBERG, Norway, NO-3601

assess design plans and data for the below listed product. This assessment is a representation by the Bureau as to the degree of compliance the design exhibits with applicable sections of the Rules. This assessment does not waive unit certification or classification procedures required by ABS Rules for products to be installed in ABS classed vessels or facilities. This certificate, by itself, does not reflect that the product is Type Approved. The scope and limitations of this assessment are detailed on the pages attached to this certificate.

Product: **Propulsion Remote Control System**

Model: **Kongsberg MCON system comprising of various components. See attached for the complete list of components.**

Endorsements:

Tier: **5 - Unit Certification Required**

This Product Design Assessment (PDA) Certificate remains valid until 19/Aug/2030 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

American Bureau Of Shipping

Vasileios Vitanopoulos, Engineer/Consultant

NOTE: This certificate evidences compliance with one or more of the Rules, Guides, standards or other criteria of ABS or a statutory, industrial or manufacturer's standards. It is issued solely for the use of ABS, its committees, its clients or other authorized entities. Any significant changes to the aforementioned product without approval from ABS will result in this certificate becoming null and void. This certificate is governed by ABS Rules 1-1-A3/5.9 Terms and Conditions of the Request for Product Type Approval and Agreement (2010)

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Tier: 5 - Unit Certification Required

Product: Propulsion Remote Control System

Model: Kongsberg MCON system comprising of various components. See attached for the complete list of components.

Endorsements:

Intended Service:

ABS Classed Vessels and Offshore Facilities in accordance with ABS Rules.

Description:

The MCON (Manoeuvring Control) system by Kongsberg Maritime is a modular and scalable marine control architecture designed for propulsion, steering, and thruster management. It can integrate operator interfaces, control cabinets, I/O modules, and network infrastructure, supporting both normal and backup control modes.

Rating:

Power Supply

- Voltage Range: 18–32 VDC
- Nominal Voltage: 24 VDC

Environmental Ratings:

- IP56 (front panels, exposed surfaces)
- IP20 (rear, internal components)

Service Restriction:

1. Unit Certification is required for this product as indicated on Marine Vessels Rules 4-1-1/table 3 item 35
2. The MCON system uses the BnR automation X20 PLC modules and automation control. This PDA does not cover those components of the MCON system, and instead, those components are covered by PDA 25-0144129-PDA. All conditions and service restrictions of that PDA are to be followed in order to use this PDA.
3. The MCON system uses the Moxa network switches. This PDA does not cover those components of the MCON system, and instead, those components are covered by PDA 21-2120153-PDA & 25-0161923-PDA. All conditions and service restrictions of that PDA are to be followed to use this PDA.
4. The MCON systems have several operator station options. If the system design is based on using either the MC340 or the MC360. This PDA does not cover those components of the MCON system, and instead, those components are covered under 21-2107667-PDA for MC340 Computer and MC360 22-2316622-PDA. All conditions and service restrictions of that PDA are to be followed to use this PDA.
5. Tests and approval are for hardware only. Each configuration and external connection is to be specifically approved by ABS engineering.

Comments:

1. The Manufacturer has provided a declaration about the control of, or the lack of, Asbestos in this product.
2. The MCON system utilises many different components which could be utilised in other systems. This PDA does not grant approval of the individual components, but the use of those components as part of the overall MCON system.
3. Control systems utilised for propulsion machinery and steering gear are classified as Category III Computer-Based Systems, in accordance with the ABS Marine Vessels Rules 4-9-3, Table 1

Notes/Drawing/Documentation:

Datasheets

- Drawing No. 405886A_PB4, Datasheet - 405886A_PB4, Revision: 1, Pages: 2
- Drawing No. CCP-140006-01TT-C, Datasheet - CCP-140006-01TT-C - CAN controller, Revision: C, Pages: 3
- Drawing No. CCP-142007-01TT-G, Datasheet - CCP-142007-01TT-G - Westermo network devices, Revision: G, Pages: 36
- Drawing No. CCP-190008-01TT-D, Datasheet - CCP-190008-01TT-D - 8 inch and 12 inch Panel Computer,

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Tier: 5 - Unit Certification Required

Revision: D, Pages: 14

- Drawing No. CCP-191021-01TT, Datasheet - CCP-191021-01TT-J - G2 Azimuth levers, Revision: J, Pages: 7
- Drawing No. CCP-191022-01TT-E, Datasheet - CCP-191022-01TT-E - G2 Rudder tillers and Helmsman lever, Revision: E, Pages: 10
- Drawing No. CCP-191023-01TT-D, Datasheet - CCP-191023-01TT-D - G2 Tunnel thruster levers, Revision: D, Pages: 7
- Drawing No. CCP-191024-02TT-E, Datasheet - CCP-191024-02TT-E - G2 Main propulsion levers, Revision: E, Pages: 9
- Drawing No. CCP-191030-01TT-C, Datasheet - CCP-191030-01TT-C - G3 Propulsion and thruster levers, Revision: C, Pages: 14
- Drawing No. CCP-192004-03TT-D, Datasheet - CCP-192004-03TT-D - MMS panels, Revision: D, Pages: 6
- Drawing No. CCP-192005-01TT-C, Datasheet - CCP-192005-01TT-C - Steering gear panels, Revision: C, Pages: 7
- Drawing No. Datasheet - CCP-140005-02TT - B&R O modules, Datasheet - CCP-140005-02TT rev H - B&R O modules, Revision: H, Pages: 165
- Drawing No. Datasheet - CCP-140005-03TT - B&R IO modules, Datasheet - CCP-140005-03TT rev J - B&R IO modules, Revision: J, Pages: 381
- Drawing No. Datasheet - CCP-141007-01TT-C - Hectronic marine controller H1151.6059, Datasheet - CCP-141007-01TT-C - Hectronic marine controller H1151.6059, Revision: C, Pages: 56
- Drawing No. Datasheet - DMN000292223_B - Hectronic marine controller H1170, Datasheet - DMN000292223_B - Hectronic marine controller H1170, Pages: 2
- Drawing No. Datasheet - DMN000326843_A_NF1 - MPCF1-10, 4 Maritime Panel Computer, Revision: B, Pages: 4
- Drawing No. DMN000286086_A_NF1 - COP05 ALC, Datasheet - DMN000286086_A_NF1 - COP05 ALC Stand alone, Pages: 2
- Drawing No. 421168E - HT00262OPTA3, Datasheet - 421168E - HT00262OPTA3 - USB to serial line converter, Revision: 4, Pages: 4

Test Reports

- Drawing No. NEMKO E21176.00, NEMKO E21176.00, IACS E10 (Partial Test), Nemko Test Lab, Dated 07/Oct/2021, Pages: 19
- Drawing No. 0026-H0203-0000213312 Rev_00, Thales 0026-H0203-0000213312 Rev_00 RELEASED, IACS E10 (Partial Test), Thales Test Lab, Dated 15/June/2021 Revision: 00, Pages: 19
- Drawing No. 0026-H0203-000 008 9130 - Revisie 00.005, Thales 0026-H0203-000 008 9130 - Revisie 00.005 - CAN Bridge Button Panel - RELEASED, IACS E10, Thales Test Lab, Dated 09/March/2021 Revision: 00.005, Pages: 177
- Drawing No. 622-20078-10-R0, DELTA 622-20078-10-R0, EMC Testing, Delta Test Lab, Dated 04/May/2022, Revision: 0, Pages: 66
- Drawing No. 9505 331 697XX 001 EQR, Thales 9505 331 697XX 001 EQR- Revision 00.012 - Azimuth Thruster G2, IACS E10, Thales Test Lab, Dated 21/May/2021 Revision: 00.012, Pages: 114
- Drawing No. E15269.00 MAR PPC_080T_BT_01, NEMKO E15269.00 MAR PPC_080T_BT_01_And_PPC_120T_BT_01, IACS E10, Nemko Test Lab, Dated 06/Jan/2021, Revision: 01, Pages: 60
- Drawing No. Applica Technical report 20216 H1151.6059, Applica Technical report 20216 H1151.6059, IACS E10, Applica Test Lab, Dated 23/May/2014, Revision: 1, Pages: 64
- Drawing No. 9505 331 699XX 001 EQR, Thales 9505 331 699XX 001 EQR - Revision 00.002 - Rudder Tiller G2, IACS E10, Thales Test Lab, Dated 28/Mar/2014 Revision: 00.002, Pages: 92
- Drawing No. 9505 331 698XX 001 EQR, Thales 9505 331 698XX 001 EQR - Revision 00.004 - Double and Single Main Propulsion G2, IACS E10, Thales Test Lab, Dated 16/May/2014 Revision: 00.004, Pages: 89
- Drawing No. EQR 0026 H0203 0000213260 Rev_00 RELEASED, EQR 0026 H0203 0000213260 Rev_00 RELEASED, EMC Testing, Thales Test Lab, Dated 15/June/2021, Revision: 00, Pages: 17
- Drawing No. E2108803, NEMKO E2108803 IACS E10 Rev.82021, IACS E10 (Partial Testing), Nemko Test Lab, Dated 28/Oct/2021 Revision: NA, Pages: 122
- Drawing No. 0026-H0203-2020062206A_Rev_01, Thales 0026-H0203-2020062206A_Rev_01_RELEASED - G3 levers, IACS E10, Thales Test Lab, Dated 09/Mar/2021, Revision: 01, Pages: 258
- Drawing No. 421171A_HT 00262 OPT-A1, 421171A_HT 00262 OPT-A1 Technical Report 2013-20053 Maritime Rev 1, IACS E10, Applica Test Lab, Dated 19/Nov/2013 Revision: 1, Pages: 57

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Tier: 5 - Unit Certification Required

- Drawing No. DANAK-198195 A503298-1-Kongsberg Maritime KM Common Operator Panels 2005, DANAK-198195 A503298-1-Kongsberg Maritime KM Common Operator Panels 2005, IACS E10 , DANAK Test Lab, Dated 19/Dec/2005, Pages: 67
- Drawing No. E2115901, NEMKO E2115901 EMC, EMC Testing , NEMKO Test Lab , Dated 25/Aug/2021 Revision: NA, Pages: 24
- Drawing No. 9505 331 695XX 001 EQR, Thales 9505 331 695XX 001 EQR - Revision 00.010 - Double & Single Tunnel Thruster G2, IACS E10 Testing , Thales Test Lab , Dated 21/May/2021 Revision: 00.010, Pages: 107
- Drawing No. DELTA REC-E702792, DELTA REC-E702792, IACS E10 Testing , Delta Test Lab, Dated 08/Apr/2011 Revision: NA, Pages: 78
- Drawing No. MC H1170 Nemko Test Report, MC H1170 Nemko Test Report E21194.01, IACS E10 Test Report , NEMKO Test Lab , Dated 15/Dec/2021, Pages: 97
- Drawing No. 433514 TRF EMC r01, 433514 TRF EMC r01, IACS E10 (Partial Test) , NEMKO Test Lab, Dated 25/Aug/2021, Revision: 01, Pages: 24
- Drawing No. NEMKO E2211100 IECEN 60945 2002, Cor1 2008 (Partial testing), IACS E10 (Partial Testing), NEMKO Test Lab, Dated 25/Aug/2021, Pages: 66
- Drawing No. Applica Technical report 20157 rev 3 MPCF1-10, 4 Maritime Panel Computer, Revision: 3, IACS E10 (Partial Testing) , Applica Test Lab , Dated 31/Jan/2014 Pages: 78
- System Architecture Information
- Drawing No. 110-0083891, 110-0083891-A_Mcon topology, Revision: A, Pages: 8
- Drawing No. 110-0083894, 110-0083894-A_FMEA_Mcon STG, Revision: A, Pages: 12
- Drawing No. 110-0076740-B, 110-0076740-B_Mcon product description, Revision: B, Pages: 25
- Drawing No. AAC0002, AAC0002 Common P&T Application Software Releases (2025-05-22), Pages: 32
- Drawing No. 110-0076740, 110-0076740-B_Mcon product description, Revision: B, Pages: 25
- Drawing No. 110-0076743, 110-0076743-B_Mcon FAT procedure, Revision: B, Pages: 33
- Drawing No. HW components list rev06, KM Manoeuvring Control HW components list rev06 (28-05-2025), Revision: 06
- Drawing No. 110-0076745, 110-0076745-B_Mcon FMEA, Revision: B, Pages: 15
- Drawing No. Mcon STG HW, Mcon STG HW documentation (2025-05-22), Pages: 51
- Drawing No. Mcon PTC HW, Mcon PTC HW documentation (2025-05-22), Pages: 239
- Miscellaneous
- Drawing No. MRA000002D_4, MRA000002D_4, EU – Mutual Recognition for Hatteland Series E , Revision: 4, Pages: 5
- Drawing No. Mcon STG User Manual, Mcon STG User Manual (2025-05-22), Pages: 254
- Drawing No. EAC-118783-01MC(A), Mcon PTC Class Manual , Revision: A, Pages: 418
- Drawing No. Mcon PTC User Manual, Mcon PTC User Manual (2025-05-22), Pages: 167

Terms of Validity:

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STANDARDS

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Tier: 5 - Unit Certification Required

ABS Rules:

Marine Vessels Rules (2025): 1-1-4/7.7, 1-1-A3, 1-1-A4 which covers the following:

4-8-3/1.7, 4-8-3/1.17, 4-9-2/3.1, 4-9-2/3.2, 4-9-2/3.3, 4-9-2/3.4, 4-9-2/3.6, 4-9-2/3.7, 4-9-2/3.8, 4-9-2/7, 4-9-2/9.1, 4-9-2/9.5, 4-9-2/17.3, 4-9-2/17.5, 4-9-2/17.7, 4-9-9/3, 4-9-9/Table 1

Offshore Rules (2025) 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following:

4-3-1/11, 4-3-5/3.13.2

DP Guide (2025): 1/9.3 , 5/1

National:

NA

International:

ICAS E10

Government:

NA

EUMED:

NA

OTHERS:

NA