



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	Kirkegårdsveien 45, Kongsberg, 3616, Norway
Place of Production	Kongsberg Maritime Korea Ltd 9-7, Sandan 3-ro, Jeonggwan-eup, Gijang-gun, Busan, 46027, South Korea
Place of Production	Kongsberg Maritime AS Bekkajordet 8a, Horten, 3194, Norway
Place of Production	Kongsberg Maritime China Ltd. No. 136 North Fute Road, Pilot Free Trade Zone, Shanghai, 200131, China
Type	Control Systems
Description	Alarm, Monitoring and Control System
Trade Name	K-Chief 700
Application	Marine and Offshore applications for use in environmental categories ENV1, ENV2 and ENV3 (EAP200 excluded), as defined in Lloyd's Register Type Approval System, Test Specification Number 1 – December 2021. Equipment marked with (1) in the appendix can only be installed in general power distribution zones.

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

Thomas Milow

Electrical & Control - Senior Specialist to
Lloyd's Register EMEA
A member of the Lloyd's Register group

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Specified Standard	Manufacturer's specification IACS UR E10 Rev. 8 / 2021
Ratings	AIM Basis Software for Operator Station, I/O drivers and common software functions in the RCU: V8.3, V8.5, V8.6, V8.7, V8.8, V8.10 and V8.12
Additional Tests	Low temperature test (-15 °C / 16 h) Ingress protection (IP2x, IP22, IP44) Acoustic level Compass safe distance For detailed test description, pls. refer to appendix.
Other Conditions	<p>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 Rules and Regulations.</p> <p>The AIM Safe System Software versions 8.3.4 up to 9.0.3 has been evaluated by TÜV Rheinland for compliance with IEC 61508 up to safety integrity level SIL3. Refer to Safety Configuration Manual No. 378006(TC).</p> <p>A net filter similar to "Schaffner Type FN2080-16-06" must be used for the RIO new hardware line (RCU 501, RSER 200-4, RMP 201-8).</p> <p>Specific Conditions of Use as stated in applicable Ex-certificates and the conditions of the LR Rules & Regulations for the Classification of Ships, Part 6, Chapter 2 shall be observed when installed in hazardous areas. The Ex-certification does not form part of this certificate.</p>

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Type Approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations.

If the specified standards are amended during the validity of this certificate, the product is to be re-approved prior to it being supplied to vessels to which the amended standards apply.

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: LR2372712TA
18-20018-02

The Design Appraisal Document TSO/24-015436_A and its supplementary Type Approval Terms and Conditions form part of this Certificate.



Appendix

Module	Description	Additional Test	Compass Safe Distance	
			Standard	Steering
ALB	Alarm buzzer	IP2X	40 cm	30 cm
ALC (Stand alone)	Operator Control Panels	-	-	-
ALC Panel	Alarm and Command panel	75 to 85 dB ¹⁾	35 cm	20 cm
BU AUT	Configurable input panel	-	35 cm	20 cm
EFI (16)	Earth Fault Indicator	IP2X	50cm	40cm
Input Panel (Mk2)	Button keypad with trackball	IP2X	35 cm	20 cm
L2C	LAN to CAN module	IP2x /-25°C ²⁾	10 cm	-
Panel Input	Operator Control Panels	-	-	-
Mk3 COP 05				
PBT (Flat Version)	Panel	-	-	-
RCU 502i	Remote Controller Unit	IP2X	29 cm	14 cm
RCU 601	Remote Controller Unit	-	-	-
RCU 602	Remote Controller Unit	IP2X	30 cm	15 cm
RDIO 420S	Remote Digital I/O module	IP2X	185 cm	105cm
RDIOR 420	Remote Digital I/O module and Relay channels	IP2X	5 cm	5 cm
RHUB200-5	Communication Hub and Repeater	IP2X	5 cm	5 cm
RMC-ST	Remote media converter	IP2X	20 cm	10 cm
RMP 201-8	Remote multipurpose I/O module	IP2X	5 cm	5 cm
RMP 420	Remote Multipurpose I/O module	IP2X	5 cm	5 cm
RMP 420S	Remote Multipurpose I/O module	IP2X	5 cm	5 cm
RMP 422i	Remote Multipurpose I/O module	-	-	-
RMP 422Si	Remote Multipurpose I/O module	IP2X	30 cm	15 cm
RSER 200-4	Serial line communication interface	IP2X	5 cm	5 cm
RTB 420	Remote Termination Board	IP2X	15 cm	10 cm
RTL8153B	Network component	-	-	-
TBP Tracker Ball Panel	Tracker Ball Panel	-	-	-
TPP	Touch Pad Panel	-	-	-
WCC 600	Watch Calling C600 panel	IP44/81 to 85 dB ¹⁾	120cm	65cm

1) Acoustic level

2) Low temperature Test

Software Version AIM Basis Software 8.3, 8.5, 8.6, 8.7, 8.8, 8.10 and 8.12