



# NIPPON KAIJI KYOKAI

## TYPE APPROVAL CERTIFICATE FOR AUTOMATIC DEVICES AND EQUIPMENT

Certificate No. TA23037M

**This is to certify** that the undernoted product(s) has/have been approved in accordance with the requirements specified in Chapter 1, Part 7 of “Guidance for the Approval and Type Approval of Materials and Equipment for Marine Use” and the relevant Society's Rules.

This certificate is issued to

Applicant: **Kongsberg Maritime AS**  
Manufacturer: **Kongsberg Maritime Korea Ltd,  
Kongsberg Maritime China Ltd,  
Kongsberg Maritime China Jiangsu Ltd,  
Kongsberg Maritime AS, Horten**  
Place of Manufacturing: **Refer to sheet 1/6**  
Product description: **Propulsion Control System (including Thrusters and Steering Control)  
Alarm, Monitoring, Control of Auxiliary Machinery and Management System  
Bridge Watch Monitoring System**  
Model: **AutoChief C20, AutoChief 600, K-Thrust 600, K-Steering 600,  
K-Chief 500 and K-Chief 600**  
Approval No.: **04A050**  
Valid until: **18 January 2028**

This certificate is subject to the conditions specified in the attached sheet(s).

Issued at Tokyo on 19 January 2023.

S. Oishi  
General Manager  
Machinery Department

Note: 1. The manufacturer, if desired, is requested to apply to the Society for renewal prior to the expiration date.

**NIPPON KAIJI KYOKAI**

Attached sheet -1/6 to the Certificate No. TA23037M

**Manufacturer & Place of Manufacturing:**

Manufacturer	Place of Manufacturing
Kongsberg Maritime Korea Ltd	9-7, Sandan 3-ro, Jeonggwan-eup, Gijang-gun, Busan, Korea
Kongsberg Maritime China Ltd	136 North Fute Road, China (Shanghai) Pilot Free Trade Zone 200131 Shanghai China
Kongsberg Maritime China Jiangsu, Ltd	No.711 of Changjiang Road, Runzhou Industry Park, Zhengjiang, China, 212002
Kongsberg Maritime AS, Horten	Bekkajordet 8A, NO-3189 Horten Norway

**Specification & documents:**

1. Particulars: Power supply: AC 100~240 V, DC 24 V

2. Components and reference drawings:

Components		Dwg. No.	Part No.
Components for navigation bridge	Integrated Navigation Panel – INP	339545B	330951
	Alarm and Command Panel - ALC	345410A	344687
	Lever Telegraph – LTU11, LTU11 ME	367938D	364330, 389505, 443086
	3-buttons - ABE11	355197	355146
Touch Control Panel	CP12 w/KBE15 (ABE11)	389143A	402586, 401892
Operator Control Panels	COP05 CRP (Control Room Panel)	HA464016	603525, 330952
	Panel Input Mk2 COP 05	339545B HA464013	330951
	COP05 ALC (Alarm & Control Panel)	HA464009	603526
Extension Alarm and Watch Call Units	WCC 600	374549	373860
Pushbutton Telegraph	PBT	330199A	8100318
Tracker Ball Panel	TBP	389995C	388930
Touch Pad Panel	TPP	389994C	388010
Bridge Wing Control Unit	BWU21 Left version	493593A	486233
	BWU21 Right version	493588A	486200

- To be continued -

## 2. Components and reference drawings:

Components		Dwg. No.	Part No.
Local Operator Stations	Remote Analog input Module      RAI-16xe(*)	336081 341333	339714 329714
	Remote Digital output Module      RDo-16xe(*)	336078 341336	339699 329699
	Remote Analog TC input Module      RAI-10tc(*)	HA451000 330186	8100161
	Remote Digital input Module      RDi-32xe(*)	336082	333523
	Remote Digital input Modulc      RDi-32Axc(*)	336145	333824
	Remote Analog output Module      RAo-8xe(*)	336083	333505
	Remote Digital I/O Module      RIO-C2xe(*)	336079 341338	333346
	Segment Controller unit SCU(*)	339779	329785
	Process Segment Starcoupler      PSS(*)	HA452541 330194	8100184
	Generator Protection Module      C3-GPxe	341339	334893
	Generator Monitoring and Control      C4xe	341340	334894
	Sensor Interface Unit      SIUxe(*)	350497	350928

- To be continued -

## 2. Components and reference drawings:

Components		Dwg. No.	Part No.
Digital Governor Unit	DGU	HA459705 330136	8100272
RPM Units	RPMe(*)	HA461974	8100289 8100278
RPMU-4 module	RPMU-4	350910A	326894
Main Engine Interface Unit	MEI(*)	HA459959 330153	8100276
Engine Safety Unit	ESU(*)	HA459797 330152	8100275
	ESU 12(*)	372127	366666
Electric Shaft System	FSS	LF12216	8100282
Multi Purpose Panel	MPP(*)	HA461755	8100290
Multi Purpose Display	MPD(*)	HA461761	8100292
	MPD-RT-flex Flush Mount Black(*)	HA461773	8100293
	MPD-RT Wall Mount Black(*)	HA461774	8100317
Push Button	Telegraph PBT(*)	HA460717	8100318
	PB4(*)		400992
Electrical Actuators	SEFA800(*)	354127 348589	346504

- To be continued -

## 2. Components and reference drawings:

Components		Dwg. No.	Part No.
Power Switch Over Units	PSO-P(*)	HA463891	8100334
LAN to 2 CAN gateway	I.2C	404663	404654, 406381
Common Thruster Lever	Lever K-Thrust Dual	419579A	416532
	Lever K-Thrust single	419578A	416533
	Lever K-Thrust Display	419577A	416534
	Lever K-Thrust Dual w/Display	419579A	405844
	Lever K-Thrust single w/Display	419578A	405842
	Lever K-Thrust Azimuth w/Display	419580A	405846
	Lever K-Thrust Azimuth	419580A	416533
	Mini Wheel K-Thrust w/Display	425396A	412364
	Mini Wheel K-Thrust	425396A	417835
Thruster Command Panel	Thruster Command Panel	420766	406412
Electrical Fuel Actuator	ELACT 3812(*)	473083A	468750
		477386A	
	DSU 38	468844A 468845A 469179B	468770

Note: The combination of above equipment can make the following systems.  
 Alarm monitoring and Control System (K-Chief)  
 Power Management System (K-Chief)  
 Propulsion Control System (AutoChief)  
 Thruster Control System (AutoChief)  
 Steering Control System (AutoChief)

- To be continued -



3. Documentation and Test Reports:

K221885-1, E501399-1, E501399-2, E501399-3, E501399-4, E502155-1, E502411-2, E502029-2, E502029-3, E502029-4, DANAK-198195Rev1, DANAK-198468Rev1, DANAK-197941 RevA, 198234, Nemco 13934, 16562, DNV 2006-3115Rev01 Teknokogisk 310-03-0319RevB, 310-04-0266RevA, DANAK-1910740, DANAK-1910922, DANAK-1910472, DANAK-1911137, DANAK-1910496, DANAK-1911187, DANAK-1911256 NEMKO-129871/Env01, NEMKO-142846, DANAK195838, DANAK-196332, DANAK-197309, DANAK-197316, DANAK-197322, DANAK-197329, DANAK-197536, DANAK-197538, DANAK-197561, DANAK-197724, DANAK-198225, DANAK-157836, DANAK-197873, DANAK-198195 Rev.1, DANAK-198709, DANAK-198710, 1910002 Rev.A, DANAK-1910004, DANAK-1910282 Rev.1, DANAK-1910283 Rev.1, DANAK-1910353 Rev.1, DANAK-1910472, DANAK-1910496, DANAK-1910740, DANAK-1910922, DANAK-1910978, DANAK-1911137, DANAK-1911279, DANAK-19307, DANAK-1911471, DANAK-1911508, DANAK-19/11809, DANAK-19/11846 Rev.1, DANAK-19/12063, DANAK-19/12064 Rev.1, DNV 2011-3438 Rev.01, NEMKO-E11201.01, DNV 2012-3095 Rev.1, DNV 2010-3604 Rev.01, DNV 2011-3416 Rev.01, DNV 2011-3419 Rev.01, DANAK-1911059, DANAK-19/12904, Mariner Systems (UK) Test Report TL1582-ENV Issie 01, Revision History for C20 System SW (V10) Software : 311245, Release note for K-Chief 600 HMI, DANAK-19/13 963 Rev.A, DANAK-19/14440 Rev.A, SP-3P08182, Software quality plan C600, Revision History for K-Chief 600 / AutoChief 600 Software 359018.12 Product description PB4 Rev.A, DANAK-19/15862, DANAK-19/10612 Rev.A, Technical Specifications L2C, Technical Specifications TMI, Technical Specifications RFU mk2, DANAK-19/16085 Rev.A, DANAK-19/15712, DANAK-19/15815, Nemko Test Report (Report No. E16203.00), Nemko Test Report (Report No. E21088.03), Nemko Test Report (Report No. E21017.03) Nemko Test Report (Report No. E21239.03) Nemko statement concerning the performed External Power Supply Failure test in report E21239.03.

- To be continued -

**Test items & approval conditions:**

## 1. Test items:

(Applied testing items are marked with X.)

ENVIRONMENTAL TESTS (IACS UR E10 Rev.8 basis)		Mark
External examination		X
Operation test and performance test		X
Electric power supply failure test		X
Power supply fluctuation test	Electric	X
	Pneumatic and Hydraulic	--
Insulation resistance test		X
High voltage test		X
Pressure test (Pneumatic and Hydraulic)		--
Dry heat test (70°C × 16 hours, 55°C × 16 hours for DSU38)		X
Damp heat test		X
Vibration test		X
Inclination test		--
Cold test		X
Salt mist test		X <sup>(3)</sup>
Electrostatic discharge immunity test		X
Radiated radio frequency immunity test		X
Conducted low frequency immunity test		X
Conducted high frequency immunity test		X
Burst / Fast transient immunity test		X
Surge immunity test		X
Radiated emission test		X
Conducted emission test		X
Flame retardant test for ELACT 3812 & DSU38		X

## 2. Approval conditions:

- (1). The product is not allowed to be installed on open decks except Bridge Wing Control Unit.
- (2). As for vibration test of environmental test, components with (\*) mark were tested at acceleration  $\pm 4.0g$  and others were tested at acceleration  $\pm 1.0g$  or  $\pm 0.7g$ .
- (3). Salt mist test was conducted only for Bridge Wing Control Unit.

- The End -