



Marine & Offshore

Certificate number: 09413/G0 BV

File number: AP 3070

Product code: 4440I

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Kongsberg Maritime AS

Horten - NORWAY

for the type of product

ALARM, MONITORING AND CONTROL SYSTEMS

AutoChief 600,K-Steering

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships.

Bureau Veritas Rules NR659

EC Code: 31

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 15 Aug 2029

For Bureau Veritas Marine & Offshore,

At BV OSLO, on 15 Aug 2024,

Rune MARSTEIN

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

AutoChief 600 is a combined remote control system, engine telegraph system and engine safety system for main engines on ships.

K-Steering is the steering control system. Measuring steering gear position and controlling steering gear based on feedback control.

1.1 Hardware List:

Item	Components	Part No.	Drawing No.	AC600	K-Steering
Components for navigation bridge	Lever Telegraph -LTU 11	364330	367938	X	X
	Lever Telegraph -LTU 11 ME	389505	367938	X	X
	ABE 11 - 3-buttons	355146	355197	X	X
	KBE15	401892	402348	X	X
Touch Pad Panel	CP12 W/KBE15 + ABE 11	402586/ 401892	389143	X	X
Push Button Telegraph	PBT Flat Version Black	8100318	330199	X	X
Bridge Wing Control Unit	BWU21 Left version	486233	110-0001301	X	X
	BWU21 Right version	486200	110-0001301	X	X
Controller unit	Segment Controller unit - SCU	329785	339779	X	X
Distributed Processing Units (DPU)	Remote Analog input Module - RAi-16xe	329714	336081, 341333	X	X
	Remote Digital output Module - RDo-16xe	329699	336078, 341336	X	X
	Remote Analog TC input Module - RAi-10tc	8100161	HA451000, 330186	X	X
	Remote Digital input Module - RDi-32xe	333523	341335	X	X
	Remote Analog output Module - RAo-8xe	333824	341334	X	X
	Remote Digital I/O Module - RIO-C2xe	333346	336079, 341338	X	X
Digital Governor Unit	DGU	8100272	HA459705, 330136	X	X
RPM Units	RPME	8100289/ 8100278	HA461974	X	X
Main Engine Interface Unit	MEI	8100276	HA459959, 330153	X	X
Engine Safety Unit	ESU	8100275	HA459797, 330152	X	X
	ESU12	366666	372127	X	X
Electric Shaft System	ESS	8100282	LF12216	X	X
Multi Purpose Panel	MPP Flush-Mount Black	8100290	HA461755	X	X
Multi Purpose Display	MPD Flush	8100292	HA461761	X	X
	CPP Backup Panel - PB4	400992	405886	X	
LAN to 2 CAN module	L2C	404654/ 406381	404663	X	X
Common Thruster Lever	Lever K-Thrust Dual	416532	419579	X	X
	Lever K-Thrust single	416533	419578	X	X
	Lever K-Thrust Display	416534	419577	X	X
	Lever K-Thrust Dual w/Display	405844	419579	X	X
	Lever K-Thrust single w/Display	405842	419578	X	X
	Mini Wheel K-Thrust w/Display	412364	425396		X
	Mini Wheel K-Thrust	417835	425396		X
Electrical Fuel Actuator	ELACT 3812	468750	473083, 477386	X	
	DSU 38	468770	468844, 468845	X	

1.2 Software versions: 12.16

2. DOCUMENTS AND DRAWINGS:

- No. 367938 D, Lever Telegraph Unit LTU11 and LTU ME Datasheet, dated 2014.
- No. 355197 C1, Outline drawing ABE II, dated 20-02-2012.
- No. 405149 F, Control Panel 12 Datasheet.
- No. 330199 B, Pushbutton Telegraph (PBT) Datasheet, dated 2013.
- No. 110-0001301A, Autochief C600 - Bridge Wing Unit BWU21 Datasheet, dated 2022.
- No. 349386/B, Distributed Processing Units SCU Datasheet, dated 2020.
- No. 341333-C, Distributed Processing Units Remote Analogue Input (RAi-16xe) Datasheet, dated 2010.
- No. 341336-C, Distributed Processing Units Remote Digital Output (RDo-16xe) Datasheet, dated 2010.
- No. 330186-A, Distributed Processing Units Remote Analogue Input (RAi-10tc) Datasheet, dated 2009.
- No. 341334-B, Distributed Processing Units Remote Analogue Output (RAo-8xe) Datasheet, dated 2010.
- No. 341335-C, Distributed Processing Units Remote Digital Input (RDi-32xe) Datasheet, dated 2010.
- No. 341338-B, Distributed Processing Units Remote Input/Output(RIO-C2xe) Datasheet, dated 2010.
- No. 330136-C, Distributed Processing Units Digital Governor Unit DGU Datasheet, dated 2015.
- No. 330212-B, AutoChief 600 RPME Datasheet, dated 2013.
- No. 330153-A, Distributed Processing Units Main Engine Interface (MEI) Datasheet, dated 2009.
- No. 330152-A, Distributed Processing Units Engine Safety Unit (ESU) Datasheet, dated 2009.
- No. 372127 A, Distributed Processing Units Engine Safety Unit 12(ESU12) Datasheet, dated 2012.
- No. 330179 A, Electronic Shaft System (ESS) Datasheet, dated 2013.
- No. HA461755, MPP BASIS Multi Purpose Panel Assembly, dated 29-05-2008.
- No. HA461773, Multi Purpose Display Low Version Outline Drawing, dated 22-08-2013.
- No. HA461755, MPP BASIS Multi Purpose Panel Assembly, dated 29-05-2008.
- No. 405886 A, Push Button 4 (PB4) Datasheet, dated 2015.
- No. 409453/C, LAN to CAN Gateway L2C Datasheet, dated 2020.
- No. 419577 A, K-Thrust Lever Display Datasheet, dated 2017.
- No. 419578 A, K-Thrust Single Lever Datasheet, dated 2017.
- No. 419579 A, K-Thrust Dual Lever Datasheet, dated 2017.
- No. 419580 A, K-Thrust Azimuth Lever Datasheet, dated 2017.
- No. 425396 A, K-Thrust MINI Wheel Datasheet, dated 2017.
- No. 477386 B, AutoChief C600 Electrical Fuel Actuator ELACT 3812 & DSU38 Datasheet, dated 2022.
- No. 468845 A, DSU38 Assembly drawing, dated 14-04-2021.

3. TEST REPORTS:**DANAK DELTA:**

- Test for Marine Type Approval of LTU11, No. DANAK-19/11809, dated 30-01-2012.
- Supplementary Test for Marine Type Approval of LTU11ME, No. DANAK-19/13963 A, dated 03-04-2014.
- Test for Marine Type Approval of ABE11, No. DANAK-1911471, dated 15-07-2011.
- Test for Marine Type Approval of panel, No. DANAK-19/15434 Rev.A, dated 07-07-2015.
- Type approval testing of ACP, PBT, MPP and MPD, No. DANAK-197329, dated 30-01-2004.
- Test Report No. DANAK-197561, dated 09-08-2004.
- Test Report No. DANAK-197724, dated 07-12-2004.
- Test for Marine Type Approval of SCU, No. DANAK-1910922, dated 11-06-2010.
- Test for Marine Type Approval of DPU, No. DANAK -1910740, dated 18-12-2009.
- Type approval testing of DGU, MEI and ESU, No. DANAK-197309, dated 19-01-2004.
- Type approval testing of ESS-me, LTU-me and ESU-ext, No. DANAK-197836, dated 14-08-2007.
- Type approval testing of ESU-12, No. DANAK-19/12063, dated 02-05-2012.
- IP 56 testing of MPP and MPD, No. DANAK-197873, dated 07-03-2005.
- Test for Marine Type approval of PB4, No. DANAK-19/15862 Revision A, dated 03-12-2015.
- Test for Marine Type approval of L2C, No. DANAK-19/16085 Revision A, dated 15-02-2016.

Nemko As:

- Test Report No. E16268.00, dated 05-05-2017.
- Test Report No. E21088.03, dated 28-10-2021.
- Test Report No. E21239.03, dated 06-07-2022.
- Test Report No. E16203.00, dated 29-03-2017.
- Test Report No. E21017.03, dated 23-11-2021.

SP:

- Test Report No. 5P05947, dated 07-07-2015.
- Test Report No. 5F007245, dated 31-07-2015.

4. APPLICATION / LIMITATION:

- 4.1 - BUREAU VERITAS Rules for the Classification of Steel Ships.
- 4.2 - The equipment fulfils the EMC requirements for installation on the Bridge and Deck Zones.
- 4.3 - AutoChief C600 Electrical Actuator ELACT 3812 & DSU38 fulfils the EMC requirements for installation in the general power distribution zone.
- 4.4 - All cables including interconnecting ones are to be equivalent to those used during EMC tests.
- 4.5 - The remote operator station can be any type approved computer.
- 4.6 - BUREAU VERITAS Environmental Category, **EC Code: 31**, and **33** for Electrical Actuator ELACT 3812.
- 4.7 - Approval also valid for ships to be granted with the notations: **AUT-UMS, AUT-CCS, AUT-PORT, AUT-IMS and CYBER RESILIENT.**
- 4.8 - Only Hardware and Firmware / Software successfully tested together in compliance with the rules as referred to in cover page, according to the declaration of the manufacturer are covered by this certificate.
- 4.9 - Any modification of the hardware, firmware or software having an impact on the product performance or functionality has to be validated with type testing.
- 4.10 - In accordance with IACS UR E22 and as applicable to programmable devices for computer based systems of Category II or III, for each ship application:
- Ship specific documentation is to be submitted including software documentation and categorization of the computer based system.
 - Inspection and testing before installation onboard is to be performed under the surveillance of the Society.
- 4.11 - Equipment covered by this Type Approval certificate has been tested according to requirements of IACS UR E10 rev9.
- 4.12 - This certificate demonstrates the compliance of this equipment with the requirements of UR E27 Rev.1 Sep 2023.

5. PRODUCTION SURVEY REQUIREMENTS:

- 5.1 - The above products are to be supplied by **KONGSBERG MARITIME A.S** in compliance with the type and the requirements described in this certificate.
- 5.2 - This type of product is within the category IBV of Bureau Veritas Rule Note NR320.
- 5.3 - BV product certificate is required.
- 5.4 - **KONGSBERG MARITIME A.S** has declared to Bureau Veritas that the type of product described in this certificate may be manufactured at the following production sites:



Kongsberg Maritime AS
P.O. BOX 1009 3194 Horten
NORWAY

Kongsberg Maritime Korea Ltd.
9-7, Sandan 3-ro, Jeonggwan-eup, Gijang-gun
BUSAN
KOREA

Kongsberg Maritime China Ltd.
136 North Fute Road
Pilot Free Trade Zone
200131 Shanghai
CHINA

Kongsberg Maritime China Jiangsu Ltd.
1-2F No. 711 Changjiang Road, Runzhou District
Jiangsu Province, P.C.212002 Zhenjiang
CHINA

6. MARKING OF PRODUCT:

- 6.1 - Trade name.
- 6.2 - Date of manufacture and serial number.
- 6.3 - Equipment type or model identification under which it was type-tested
- 6.5 -  or  conformity marking, as relevant

7. OTHERS:

- 7.1 - It is **KONGSBERG MARITIME A.S** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
- 7.2 This certificate supersedes the Type Approval Certificate N° 09413/F1 BV issued by the Society.

*** END OF CERTIFICATE ***