



NIPPON KAIJI KYOKAI

TYPE APPROVAL CERTIFICATE FOR LIQUID LEVEL GAUGE / HIGH LEVEL ALARM

Certificate No. TA22258M

This is to certify that the undernoted product(s) has/have been approved in accordance with the requirements specified in the Chapter 7, Part 6 and Chapter 4, 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

Manufacturer:	KONGSBERG MARITIME AS
Place of Manufacturing:	Skonnertveien 1, NO-7005 Trondheim, Norway
Product description:	Cargo Monitoring and Control System
Model:	K-Gauge
Approval No.:	12LG002
Valid until:	31 January 2027

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

Issued at Tokyo on 2 May 2022.



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.

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Attached sheet -1/4 to the Certificate No. TA22258M

Specification & documents:

1. Ratings: Power supply: DC 24 V

2. Components and reference documents:

Components		Documents	Ex-Type
Radar Tank Gauge	GLA-310/5	383758F, 394663D, 442205E, 411509B, 435445B	Ex ia IIC T4 Ga
	K-Gauge TOP	386773B	
Signal Processing Unit	GLK-300	P-GLK300/CE Rev.I, 376020B	Ex ia Ga IIC + IIB
Microcomputer	RCU 502i	429804B, 429810A	-
	RCU 602	383971A, 408644B, 418371A	
Transmitter Barrier	DZ-120	P-DZ120/CE Rev. B	Ex ia Ga IIC
IO Module	RMP 420	RMP420 Datasheet 312743B, RMP420 HW Descr 311165E	-
IO Module	RDIOR 420	RDIOR 420 Datasheet 312745a, RDIOR 420 HWDescr 311163D	-
Maritime Computer	P330 Tiny	Refer to Approval No.19A046.	-
High Level Sensor	GL-7B	GL-7B/CE/C	Ex ia IIC T4,5 Ga
Cargo Temperature Unit	GC-300	P-GC300/CE/J	Ex ia IIC T4 Ga
Cargo Temperature Unit	GC-306	371645D	Ex ia IIC T4 Ga

- To be continued

3. Test Reports etc.:

Test Report No. 310-03-0319A, 310-04-0266, 310-04-0044
Nemko Test Report Vibration 141442 (Report No. E10017.00) (2010-01-19)
Nemko Test Report 110042 (Report No. E09680.00) (2009-06-24)
Nemko Declaration for Salt Mist Test GLA-300 & GC-300
Nemko Declaration for Pressure Test – GLA-300
DELTA Test Report DANAK-1910541, DANAK-198508, DANAK-198696
SW revision history for K-Gauge 386311O
Nemko Test Report 285039 (Report No. E15308.02) (2016-07-29)
Nemko Test Report 236666 (Report No. E13152.02) (2013-09-30)
Nemko Test Report 233030 (Report No. E13227.00) (2013-10-02)
Nemko Test Report 316442 (Report No. E16236.00) (2016-11-14)
Nemko Test Report 209536 (Report No. 209536) (2012-08-21)
Nemko Test Report 330633 (Report No. E17118.00) (2017-09-22)
Nemko Test Report 298130 (Report No. 298130) (2015-12-21)
Sinusoidal vibration tests for GLA-310/5 Dual GLA-310/5 Dual 443392
Nemko Test Report 350746 (Report No. E18081.00) (2018-04-23)
Nemko Test Report 288862 (Report No. E15165.00) (2015-09-18)
Nemko Test Report 288862 (Report No. E15165.01) (2017-04-28)
Nemko Test Report 450658 (Report No. E21214.00) (2021-10-19)
Nemko Test Report 431211 (Report No. E21088.03) (2021-10-28)
Nemko Test Report 330633 (Report No. E17118.00) (2017-09-22)
Nemko Test Report 285039 (Report No. E15308.02) (2016-07-25)
IECEX Certificate: IECEXSIR 14.0025X for GLA-310
IECEX Certificate: IECEXPRES 14.0053X for GLK-300
IECEX Certificate: IECEXSIR 14.0024X for GC-300 and GC-306
IECEX Certificate: IECEXPRES 16.0020 for DZ-120
IECEX Certificate: IECEXTUN 13.0030X for GL-7B/CE/C

- To be continued -

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Attached sheet -3/4 to the Certificate No. TA22258M

Test items & approval conditions:

1. Test items: (Applied testing items are marked with X.)

ENVIRONMENTAL TESTS (IACS UR E10 Rev.7 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 (Temperature 70°C × 16 hours) Note (1)		X
Damp heat test		X
Vibration test (Acceleration ±0.7g × 1.5 hours)		X
Inclination test		--
Cold test (Temperature -20°C × 16 hours) Note (2)		X
Salt mist test		--
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
Test for intrinsically safe test		X
Flame retardant test		X

Note (1): The dry heat test for GL-7B, GCB-303, GCB-306 and GLA-310/5 was carried out at 85°C × 16 hours.

Note (2): The cold test for GL-7B, GCB-303, GCB-306 and GLA310/5 was carries out at -45°C × 16 hours.

- To be continued -

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Attached sheet -4/4 to the Certificate No. TA22258M

2. Approval condition:

The following tests for individual products are to be carried out at the manufacturing plant before delivery under attendance of the surveyor.

(a) Visual Inspection (b) Performance Test

- The End -