



# Design Appraisal Document

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Date  
**18 September 2019**

Please quote this reference number on all future communications  
**HPC 1662157/38798-19/MK/JB/AC**

**THE LLOYD'S REGISTER'S TYPE APPROVAL SYSTEM, 2017  
ISSUED TO: KONGSBERG MARITIME AS, TRONDHEIM - NORWAY  
FOR: CARGO MONITORING AND CONTROL SYSTEM, TYPE: K-GAUGE  
TYPE APPROVAL CERTIFICATE NO. 18/20065 (E1)**

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register's Type Approval System Procedure TA14 and this Design Appraisal Document forms part of the Certificate.

## APPROVAL DOCUMENTATION

ETS 52631	Application Checklist – Appendix to Form 2502TA	11.03.2019
ETS 53697	Request for Marine Services – Type Approval	05.09.2019
ETS 37441-18	Design Appraisal Document of previous certificate no. 18/20065	16.10.2018
unnumbered	Production quality assessment report of Kongsberg Maritime Korea	12.07.2019
OSL1900153	Production quality assessment report of Kongsberg Maritime (Ranheim)	06.06.2019
PRJ1110015359	Production quality assessment report of Kongsberg Maritime China (Shanghai)	02.09.2019
387265 Rev. B	Product data sheet K-Gauge CTS	undated
394663 Rev. B	Product data sheet LNG Fuel Tank GLA-310/5-Fuel	undated
411509 Rev. A	Product data sheet RTG for Liquefied Ammonia (NH <sub>3</sub> ) GLA-310/5-NH <sub>3</sub>	undated
442205 Rev. A	Product data sheet Radar Tank Gauge for Gas Carriers GLA-310/5-Dual	undated
383758 Rev. C	Product data sheet Radar Tank Gauge for Gas Carriers GLA-310/5	undated
P-GLK300/CE Rev. G	Product data sheet Signal Processing GLK-300	19.09.2017
312743 Rev. B	Product data sheet Remote multipurpose I/O Unit RMP420	undated
371645 Rev. C	Product data sheet Cargo Temperature Unit GC-306	undated
443392	Sinusoidal vibration test for GLA-310/5 Dual (manufacturer's statement)	25.10.2018
434902 Rev. A	Software Quality Plan and Life Cycle Activities for K-Chief 700 and K-Safe	18.12.2017
386311 Rev. N	SW revision history for K-Gauge	08.10.2018

FINAL ACCEPTANCE OF ACTUAL ITEM(S) DEPEND(S) ON SATISFACTORY SURVEY AND TESTING

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### APPROVAL DOCUMENTATION (continued)

IECEX 14.0025X (Issue 1)	IECEX Certificate for Radar Tank Gauge GLA 300 & GLA-310	17.12.2014
Sira 14ATEX2056X (Issue 0)	Ex Certificate for Radar Tank Gauge GLA 300 & GLA-310	undated

### TEST REPORT

443414 Rev. A	Vibration Test Report for GLA-310/5 Dual	23.11.2018
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### Supplementary Type Approval Terms and Conditions

*Type Approval certifies that a representative sample of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein. It does not mean or imply approval for any other use, nor approval of any product(s) designed or manufactured otherwise than in strict conformity with the said representative sample.*

*Type Approval is based on the understanding that the manufacturer's recommendations and instructions and any relevant requirements of the Rules and Regulations are complied with.*

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

*Lloyd's Register EMEA reserves the right to cancel or withdraw this Type Approval Certificate in accordance with the LR Type Approval System Procedure.*

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