Lloyd's Register

Certificate No: LR2225822TA
Issue Date: 06/02/2022
Expiry Date: 05/02/2027

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	**Hoppe Marine GmbH**
Address	Kieler Str. 318, Hamburg, 22525, Germany
Type	Recording And Indicating Instruments
Description	Processing Units and Motion Sensors Programmable Logic Controller, Electronic Inclinometer & Ships Inertial Measuring System, Passive Power over Ethernet (PoE) and Linear Position Indicator Refer to the Appendix for further details.
Trade Name	HOMIP 2, HOSIM 2 and Electronic Inclinometer
Application	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2 and ENV3 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 – July, 2015.
Specified Standard	LR Test SpecificationNumber 1 – July, 2015 IEC 60945:2002 IEC61162:2010 Alert State Diagram acc. IEC 61924-2:2012 IACS unified requirements E10 (Rev.8 Feb 2021)

Thorsten Wolff

Senior Specialist to Lloyd's Register EMEA
A member of the Lloyd's Register group

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Ratings Refer to the Appendix for further details.

Additional Tests HOSIM 2 and Linear Position Indicator: Enclosure test IP X8 (1bar/40hrs)
Low temperature (-15°C/16hrs)

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: 17/20011

The Design Appraisal Document HTS/ETS 42210-22/TW and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Appendix

TYPES

	Part No.	Software Version
HOMIP 2 (Hoppe Monitor Interact Process)	F-02497-18013	3.y.zz
Hoppe Electronic Inclinometer	F-03102-30003	1.y.zz
HOSIM 2 (Hoppe Ships Inertial Measuring System)	F-03102-21000	1.y.zz
Hoppe Linear Position Indicator	F-08381-00001 F-08381-00002-12 F-08381-00003-13	
Passive Power over Ethernet (PoE)	F-09417-00000	

y = minor modifications; zz = bug fixes

RATINGS

HOMIP 2 (Hoppe Monitor Interact Process)
Network: 2 x Ethernet RJ 45,
ETH0: 10/100 Mbit/s, ETH1: 10/100/1000Mbit/s, MDIX;
USB: 1x Device and 2x Host, USB 2.0, up to 50 MB/s;
Card interface: SD / MMC, up to 25 MB/s;
Serial interfaces (optional): 2x RS 422, 6x RS 485, 2x CAN 500 Kbit; all interfaces isolated 250 VDC
Relays: K1 system alarm: 1 A / 50 VDC resistive load (NC)
optional: K2 and/or K3 multi-purpose: 0.5 A/125 VAC
Power supply: 24 VDC
Power consumption: 15 W
Degree of protection: IP44

HOSIM 2 (Hoppe Ships Inertial Measuring System)
Processor: ARM Cortex A9 Dual Core, 800 MHz, 32 bit; 1GB RAM;
Root file system: FLASH 4 GB
Interfaces: 1x RS422/RS485; 1x RS485; 1x Ethernet 100 Mbit, Auto-MDIX
Measurement accuracy of the HOSIM system:
Linear acceleration: ± 0.005m/s^2 (standard deviation)
Angular velocity: ± 0.05°/s (standard deviation)
Roll angle/pitch angle: ± 0.01° (static, standard deviation)
Power supply: 24 VDC
Power consumption: 10 W
Degree of protection: IPX8

Hoppe Electronic Inclinometer
Processor: ARM Cortex A9 Dual Core, 800 MHz, 32 bit; 1GB RAM;
Root file system: FLASH 4 GB
Power supply: 24 VDC, 600 mA miniature fuse
Power consumption: 12 W
Degree of protection: IP44

Hoppe Linear Position Indicator
Communication: Open/Close indication = high/low signal for digital outputs
Power Supply: 24 VDC nominal
Max. current: Default 250 mA (depending on input resistance of connected digital input module)
Power input protection: Self-resetting fuse (I (trigger): 300mA)
Degree of protection: IPX8

Passive Power over Ethernet (PoE)
Communication: X1: 24 VDC Power
X2: Ethernet 10 Base-T & Ethernet 100 Base-TX
X3: Mixed Ethernet and power
Power supply: 24 VDC
Current: max. 1 A

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LLOYD'S REGISTER TYPE APPROVAL – DESIGN APPRAISAL DOCUMENT
ISSUED BY: HAMBURG TECHNICAL SUPPORT OFFICE (HPC1662079)
ISSUED TO: HOPPE MARINE GMBH, HAMBURG
FOR: PROCESSING UNITS AND MOTION SENSORS PROGRAMMABLE LOGIC CONTROLLER, ELECTRONIC INCLINOMETER & SHIPS INERTIAL MEASURING SYSTEM, PASSIVE POWER OVER ETHERNET (POE) AND LINEAR POSITION INDICATOR
TYPES HOMIP 2, HOSIM 2

The undernoted documents have been reviewed for compliance with the requirements of the Lloyd's Register Type Approval System Procedure TA14 Version 04 (September 2020) and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Unnumbered	Type Approval Application Checklist	18.11.2021
274109	Request for Marine Services – Type Approval	09.12.2021
F-09539-09072-CLOG	Change Log HOMIP 2	05.08.2021 Revision 1.2
17/20011	LR Type Approval Certificate	06.02.2017
HTS/ETS 34765-17	Design Appraisal Document for Certificate No. 17/20011	06.02.2017
HPC2062027	Production Quality Assessment Form	19.05.2020
Unnumbered	Test Protocol Firmware HOMIP2 - 3.0.4	10.02.2021
Unnumbered	Test Protocol Firmware HOMIP2 - 3.0.6	04.05.2021

TEST REPORTS

190-20	Treo Laboratory Test Report	06.08.2020

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Lloyd's Register EMEA
LR031.1.2016.06

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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 Lloyd's Register Type Approval System Procedure.