Certificate No: LR21383571TA
Issue Date: 28/07/2021
Expiry Date: 27/07/2026

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	**HSD Engine Co., Ltd.**
Address	67, Gongdan-ro, Seongsan-gu, Changwon-si, Gyeongnam, 51561, Republic of Korea
Type	Alarm And Monitoring Systems
Description	O-WACS comprising: - CU (Control Unit): Display (VFD), Digital Output (High Alarm, High High Alarm), Analogue Output (4 to 20mA), Serial Communication (RS-485) - SM (Sensing Module): Resolution (0.2%), Maximum Working Pressure (2 kg/cm2)
Trade Name	O-WACS
Application	Marine, offshore and industrial applications for use in environmental categories ENV2 & ENV4 as defined in LR Type Approval System Test Specification No. 1-2020 where the Test Specification is satisfactory for the intended operation.
Specified Standard	Manufacturer's specifications
Ratings	CU Power Supply: DC 5V to DC40V SM Maximum Working Pressure : 2 kg/cm^2

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Seong-Rae Noh

Specialist to Lloyd's Register Asia
A member of the Lloyd's Register group

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Other Conditions

The certificate attests to the hardware's suitability for the environmental categories stated.

Type approval does not eliminate the need for normal inspection and survey procedures required by the Rules and Regulations. If the specified standards are amended during the validity of this certificate, the product is to be re-approved prior to it being supplied to vessels to which the amended standards apply. In case of applications other than marine, the application of the type approval certificate will be limited to the relevant scope of the specified standard and acceptance thereof by the local authorities.

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 Asia of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: 17/40049(E1)

The Design Appraisal Document BTS/ETS/E212067 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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