Certificate No: LR21242377TA
Issue Date: 18/10/2021
Expiry Date: 23/02/2026

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	**Emerson Damcos A/S**
Address	Emerson Automation Solutions, Aaderupvej 41, Næstved, 4700, Denmark
Place of Production	Emerson Process Management Marine Systems (Shanghai) Co., Ltd. Pudong New District, T3-7, No. 128 Long Gui Road, Jinqiao Export Processing Zone (South), Shanghai City, 201201, China
Place of Production	Emerson Damcos A/S Emerson Automation Solutions, Aaderupvej 41, Næstved, 4700, Denmark
Type	Control Systems
Description	The LPUM – Local Power Unit is an integrated electro-hydraulic unit for control of valves and actuators LPUM-S (for single–acting spring-operated actuators, fail-safe) LPUM-D (for double-acting actuators, fail-set)
Trade Name	LPUM-S, LPUM-D
Application	Marine, offshore and industrial applications for use in environmental categories ENV1, ENV2, ENV3, ENV4 and ENV5(1) as defined in Lloyd's Register Approval System, Test Specification No. 1, 2002 (1) Units intended for mounting on open deck to be provided with special

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Matthias Karg

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

71 Fenchurch Street, London, EC3M 4BS, United Kingdom

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Type Approval Certificate

	surface treatment (coating)
Specified Standard	Manufacturer's specification IACS E10 Rev. 8 / 2021
Ratings	Working Pressure: 135 bar Safety valve pressure: 210 bar Power supply: 220-230 VAC / 50-60 Hz
Additional Tests	Low temperature test (-30 °C / 24 h, tested with special oil, type Shell Tellus Artic 32) Dry heat test (75 °C / 22 h) Enclosure test IP 68 (3 bar / 24 h) Shock test (80 g / 6 ms)
Other Conditions	Final functional arrangements will be subject to the project related Plan Approval Process particularly under consideration of Rules & Regulations for the Classification of Ships, Part 5. Materials sensitive to heat, such as aluminium, are not to be used in systems essential to the safe operation of the ship, or for containing combustible liquids or sea-water where leakage or failure could result in fire or flooding. 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.

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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.

The Design Appraisal Document HTS/ETS 41386-21/MK and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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