



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	EMMIS SA
Address	11, ANDREA METAXA, KIFISIA, 14564, Greece
Place of Production	EMMIS SA 11, ANDREA METAXA, KIFISIA, 14564, Greece
Type	Transformers
Description	low voltage dry type transformers 5kVA to 1600kVA; refer to Appendix for details
Trade Name	EMMIS MAR/TC series
Application	Marine, offshore and industrial applications in environmental category ENV2 as defined in Lloyd's Register Type Approval System, Test Specification Number 1- July 2015.
Specified Standard	Manufactured in accordance with: IEC 60076-11:2018 Power Transformers – Dry Type Transformers, IEC 60092-303:1980 Electrical Installations In Ships – Transformers For Power And Lighting, IEC 61558-2-4:2021 Isolating Transformers (applic. for power up to 40kVA) & Lloyd's Register Rules and Regulations for the Classification of Ships Part6 Chapter2.

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Additional Tests Enclosure Protection IP23

Other Conditions Transformers of 100 kW and over, where intended for use for essential and emergency services, are to be surveyed by LR Surveyor(s) during manufacture and testing.

Transformers should be selected and installed such that the degrees of protection (IP), as specified in IEC 60092-201: Electrical Installations in Ships- Part 201: System Design – General, will satisfy the requirements for the relevant installation location.

Manufacturer's instructions are to be followed.

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 Hellenic Lloyd's SA of any modification or changes to the equipment in order to obtain a valid Certificate.

Previous Version: 17/00085

The Design Appraisal Document PTS/ETS/SZA/PRJ11100382006 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Appendix

Ratings

Rated Power	5-1600KVA
Number Of Input - Output Phases	3 - 3
Operation Frequency	50-60Hz
Input Voltage	Up to 1000V
Output Voltage	Up to 1000V
Windings Connection	D-d or Yn-yn or Yn-d or D-yn
Type	Dry
Class	I (earth terminal – protective conductor)
Kind Of Operation	Continuous at rated power
Insulation Class	F
Voltage Drop	2.5% for power more than 15KVA 5% for power up to 15KVA
Environmental Category	2
Cooling	AN (normal airflow)
Ambient Temperature	45 °C max
Temperature Rise	90 °C max
Lifting Capability	Lifting eye for power 10-1600KVA
Protection Level	IP23
Floor Mounting	Foot plates
Terminals	Rail type or high current into enclosure or bars (depending on current)