



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	Clemens Lammers GmbH & Co. KG	
Address	Offenbergweg 17, Rheine, 48432, Germany	
Type	Electric Motors	
Description	Asynchronous Low-Voltage Motors with Aluminium or Cast-Iron Enclosure 1TZ5 series 1TZ9 series 1PC1 series 1TE1 series 1PC3 series	
Trade Name	1TZ5, 1TZ9, 1PC1, 1TE1, 1PC3	
Application	Marine and Offshore use	
Specified Standard	IEC/ EN 60034-1: 2010 with all relevant parts IEC 60092-301: 1980, including Amd 1: 1994 and Amd 2: 1995	
Ratings	Rated Output:	0,03 kW up to 580 kW
	Synchronous Speed:	750 rpm to 3600 rpm
	Rated Voltage:	200 V up to 690 V

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Rated Frequency: 50 Hz, 60Hz, converter operation ≤ 690 V
Number of Poles: 2, 4, 6, 8 and pole-changing types
Insulation Class: 155 (F), 180 (H)
Ambient Temperature: -20°C - $+50^{\circ}\text{C}$
Type of Enclosure: IP55, IP56, IP65 or IP66
Frame Size: 71M up to 355L
Motor types 1TE102.1A... to 1TE102.1D... and 1TE103.1A... to 1TE103.1D... are certified safe type as: II 3D Ex tc IIIB T120°C Dc IP55 or II 3D Ex tc IIIB T140°C Dc IP55 according to PTB 15 ATEX 3005.
Motor types 1TE101.1A... to 1TE101.1D... are certified safe type as: II 2D Ex tb IIIC T120°C Db IP65 or II 2D Ex tb IIIC T140°C Db IP65 according to PTB 15 ATEX 3007.

Other Conditions

The ratings and conditions for the application of the certified safe type motors in hazardous zones and areas are to be obtained from the applicable PTB certificates.

The 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.

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: LR2002495TA

The Design Appraisal Document TSO-24-023703/TW and its supplementary Type Approval Terms and Conditions form part of this Certificate.