



Marine & Offshore
Division

Certificate number: 42980/A0 BV

File number: ACE4/849/3

Product code: 2584H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

Clemens Lammers GmbH
Rheine - GERMANY

for the type of product

ASYNCHRONOUS MACHINES (Power below 100kW)
1TZ90 and 1TZ95 series

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships
IEC 60034-1: 2010 and IEC 60092-301: 1995

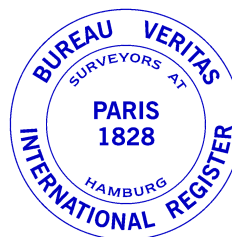
This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 11 Feb 2020

For BUREAU VERITAS,

At BV HAMBURG, on 11 Jan 2016,

Dirk Hoepfner



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine & Offshore Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

The 1TZ90 and 1TZ95 series are 3-phase asynchronous motors.

Main characteristics:

Rated voltage: 230V to 690V
 Rated power: Up to 99kW
 Number of poles: 2, 4, 6, 8 or pole-changing types
 Rated frequency: 50Hz, 60Hz or for operation with frequency converter
 Duty type: S1 (standard), S2...S9 according to IEC standard (option)
 Insulation class: F (standard), H (option)
 Temperature rise: Class F
 Ambient temperature: 45°C
 Degree of protection: IP55 (standard), IP56 (option)
 Cooling: self-ventilated (standart), forced-air cooled or naturally cooled without fan (option)
 Housing material: 1TZ90 series - aluminum
 1TZ95 series - grey cast iron

2. DOCUMENTS AND DRAWINGS:

- Catalogue: Version 3.03 - 12.2015
- 1TZ9003-1DA3 V1.4.21 dated 04.05.2015 data and dimension sheet
- 1TZ9503-2AA5 V1.4.21 dated 04.05.2015 data and dimension sheet

3. TEST REPORTS:

- 15/257560 UD1503/1699622-016-005 dated 07.05.15
- 15/257560 UD1504/1706769-016-002 dated 07.05.15

4. APPLICATION/LIMITATION:

- 4.1 - Bureau Veritas Rules and Regulations for the Classification of Steel Ships and IEC60092 series.
- 4.2 - The motors are intended for installation in enclosed spaces.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The above mentioned products are to be supplied by **Clemens Lammers GmbH** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320.

5.3 - **Clemens Lammers GmbH** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products:

Siemens AG I DT LD
Siemensstraße 15
97616 Bad Neustadt
GERMANY

Siemens s.r.o.
odštipný závod Elektromotory Frenštát
Markova 952
744 01 Frenštát pod Radhoštěm
CZECH REPUBLIC

Siemens s.r.o.
odštipný závod Elektromotory Mohelnice
Nádražní 25
789 85 Mohelnice
CZECH REPUBLIC

5.4 - Equipment is to be supplied with manual(s) for installation, use and maintenance.

6. MARKING OF PRODUCT:

- According to IEC 60034 specification

7. OTHERS:

7.1 - This approval is given on the understanding that the Society reserves the right to require check tests to be carried out on the units at any time and that **Clemens Lammers GmbH**, will accept full responsibility for informing shipbuilders, ship owners or their sub-contractors of the proper methods of use and general maintenance of the units and the conditions of this approval.

7.2 - This certificate is linked to Type Approval Certificate N° 40117/A0 BV issued by the Society

*** END OF CERTIFICATE ***