



Marine &amp; Offshore

Certificate number: 05990/E0 BV

File number: ACE 04/840/02

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*

**VEM motors Thurm GmbH**  
Zwickau - GERMANY

*for the type of product*

**ASYNCHRONOUS MACHINES (Power below 100kW)**

Induction Motors below 100kW  
KPR, KPER and IE\*-KPR, IE\*-KPER

### Requirements:

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

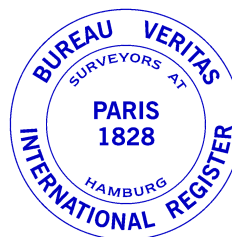
*This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.*

**This certificate will expire on: 12 Nov 2023**

**For Bureau Veritas Marine & Offshore,**

At BV HAMBURG, on 12 Nov 2018,

Dirk Hoefner



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 Marine & Offshore. 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 available on the internet site [www.veristar.com](http://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 Marine & Offshore 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.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

## THE SCHEDULE OF APPROVAL

### **1. PRODUCT DESCRIPTION :**

The **KPR**, **KPER** and **IE\*-KPR**, **IE\*KPER** series are three phase low voltage asynchronous motors with squirrel-cage rotor.

#### **Main characteristics:**

Shaft height: KPR, IE\*-KPR: 56 - 63 - 71 - 80 - 90 - 100 - 112  
 KPER, IE\*-KPER: 63 - 71 - 80 - 90 - 100 - 112 - 132

Material stator housing: Grey cast iron

Number of poles: 2 - 4 - 6 - 8

Duty cycle rating: S1

Protective degree: IP54, IP55 or IP56

Insulation class: 155 (F)

Rated voltage: up to 690V

Frequency: 50Hz/60Hz

Power (kW) at 45°C 50/60 Hz	2 pole		4 pole		6 pole		8 pole	
	KPR/ IE1-KPR	KPER/ IE1-KPER	KPR/ IE1-KPR	KPER/ IE1-KPER	KPR/ IE1-KPR	KPER/ IE1-KPER	KPR/ IE1-KPR	KPER/ IE1-KPER
0.09/0.105	-	-	-	-	56 K6	63 K6	63 K8	71 K8
0.12/0.14	-	-	56 K4	63 K4	56 G6	63 G6	63 G8	71 G8
0.18/0.21	56 K2	63 K2	56 G4	63 G4	63 K6	71 K6	71 K8	80 K8
0.25/0.3	56 G2	63 G2	63 K4	71 K4	63 G6	71 G6	71 G8	80 G8
0.37/0.44	63 K2	71 K2	63 G4	71 G4	71 K6	80 K6	80 K8	90 S8
0.55/0.65	63 G2	71 G2	71 K4	80 K4	71 G6	80 G6	80 G8	90 L8
0.75/0.9	71 K2	80 K2	71 G4	80 G4	80 K6	90 S6	90 L8	100 L8
1.1/1.3	71G2	80 G2	80 K4	90 S4	80 G6	90 L6	100 S8	100 LX8
1.5/1.8	80 K2	90 S2	80 G4	90 L4	90 L6	100 L6	100 L8	112 M8
2.2/2.6	80 G2	90 L2	90 L4	100 L4	100 L6	112 M6	100 LX8 112 M8	112 MX8 132 S8T 132 S8
3.0/3.6	90 L2	100 L2	100 S4	100 LX4	100 LX6 112 M6	112 MX6 132 S6T 132 S6	112 MX8	132 M8
4.0/4.8	100 S2	112 M2	100 L4	112 M4	112 MX6	132 M6	-	-
5.5/6.6	100L2 112 MY2	112 MX2 132 S2T 132 S2	100 LX4 112 M4	112 MX4 132 S4T 132 S4	-	-	-	-
7.5/9.0	100 LV2 112 M2	112 MV2 132 SX2T 132 SX2	-	-	-	-	-	-

Power (kW) at 45° C 50/60 Hz	2 pole		4 pole		6 pole		8 pole	
	IE2-KPR	IE2-KPER	IE2-KPR	IE2-KPER	IE2-KPR	IE2-KPER	IE2-KPR	IE2-KPER
0.12/0.14	56 G2	-	63 K4	-	-	63 G6	-	-
0.18/0.21	63 K2	-	63 G4	-	71 K6	-	-	-
0.25/0.30	63 G2	-	71 K4	-	71 G6	-	-	80 G8
0.37/0.44	71 K2	-	71 G4	-	80 K6	-	90 S8	-
0.55/0.65	71 G2	-	80 K4	-	80 G6	-	90 L8	-
0.75/0.9	80 K2	-	80 G4	-	90 S6	-	100 L8	-
1.1/1.25	-	-	-	-	-	-	100 LX8	-
1.1/1.3	80 G2	-	90 S4	-	90 L6	-	-	-
1.5/1.25	-	-	-	-	-	-	-	112 MV8
1.5/1.8	90 S2	-	90 L4	-	100 LX6	-	-	-
2.2/ -	-	-	-	-	-	-	-	132 S8
2.2/2.6	90 L2	-	100 L4	-	-	112 MV6	-	-
3.0/ -	-	-	-	-	-	-	-	132 M8
3.0/3.6	100 L2	-	100 LX4	-	-	112 M6 132 S6	-	-
4.0/4.5	-	-	-	-	-	132 M6	-	-
4.0/4.8	-	112 MX2	112 M4	112 MZ4	-	-	-	-
5.5/6.6	-	112 MV2 132 SX2T 132 S2	112 MX4	132 S4	-	-	-	-
7.5/7.5	-	112 MW2 132 SX2T	-	-	-	-	-	-

Power (kW) at 45° C 50/60 Hz	2 pole		4 pole		6 pole		8 pole	
	IE3-KPR	IE3-KPER	IE3-KPR	IE3-KPER	IE3-KPR	IE3-KPER	IE3-KPR	IE3-KPER
0.12/0.14	56 G2	-	-	63 K4	63 G6	-	-	-
0.18/0.21	63 K2	-	63 G4	-	71 K6	-	-	-
0.25/0.30	63 G2	-	71 K4	-	71 GY6	-	80 G8	-
0.37/0.44	71 K2	-	71 G4	-	80 K6	-	90 S8	-
0.55/ -	-	-	-	-	-	-	90 L8	-
0.55/0.45	-	-	-	-	80 G6	-	-	-
0.55/0.65	71 G2	-	80 K4	-	-	-	-	-
0.75/0.9	80 K2	-	80 G4	-	90 S6	-	100 L8	-
1.1/0.92	-	-	-	-	90 L6	-	-	-
1.1/1.25	-	-	-	-	-	-	100 LX8	-
1.1/1.3	80 G2	-	90 S4	-	-	-	-	-
1.5/0.92	-	-	-	-	100 LX6	-	-	-
1.5/1.25	-	-	-	-	-	-	-	112 M8
1.5/1.8	90 S2	-	90 L4	-	-	-	-	-
2.2/ -	-	-	-	-	-	112 MV6	-	132 S8
2.2/2.6	90 L2	-	100 LW4	-	-	-	-	-
3.0/ -	-	-	-	-	-	132 S6	-	-
3.0/3.6	100 L2	-	100 LZ4	-	-	-	-	-
4.0/4.5	-	-	112 MW4	-	-	-	-	-
4.0/4.8	112 M2	112 M2	-	-	-	-	-	-
5.5/6.6	-	132 S2T	-	-	-	-	-	-
5.5/6.4	-	132 S2	-	-	-	-	-	-

**2. DOCUMENTS AND DRAWINGS :**

- Catalogue: EMW/03-172 E/ 0209
- 05-0001:04 Rev. 02 dated 08.04.02; ET-N 111 153.03 dated 23.08.11; ET-N 111 153.04 dated 23.08.2011
- Technical documentation stored in file ACE 04/840/02.

For E0 version:

- Catalogue: VMUK\_NS02-111-EN-2/17
- 05-0001:04 Rev. 03 dated 03.11.14; ET-N 111 153.01/03/04 dated 31.01.18

**3. TEST REPORTS :**

VEM motors Thurm GmbH:

- F166-I 12 dated 12.04.2012; F167-I 12 dated 12.04.2012; M170-I 12 dated 12.04.2012
- A61480B0 dated 05/04/2006; A61484B4 dated 05/04/2006; A50739B8 dated 05/04/2006
- 45 test reports carried out between January 1991 and December 1992

For E0 version:

- F863-I/18 dated 18.09.18; F864-I/18 dated 18.09.18

**4. APPLICATION / LIMITATION :**

- 4.1 - Bureau Veritas Rules and Regulation for the Classification of Steel Ships and IEC 60092 series.
- 4.2 - The motors are intended for the installation in enclosed spaces.

**5. PRODUCTION SURVEY REQUIREMENTS :**

- 5.1 - The electric motors are to be supplied by **VEM motors Thurm 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 and as such does not require a BV product certificate.
- 5.3 - **VEM motors Thurm 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.

**VEM motors Thurm GmbH**  
**Äußere Dresdner Str. 35**  
**08066 Zwickau**  
**GERMANY**

**6. MARKING OF PRODUCT :**

- According to IEC 60034 specification

**7. OTHERS :**

- 7.1 - It is in the responsibility of **VEM motors Thurm GmbH** to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.
- 7.2 - This certificate supersedes the Type Approval Certificate N° 05990/D0 BV issued on 16 May 2012 by the Society

\*\*\* END OF CERTIFICATE \*\*\*