



**BUREAU  
VERITAS**

Bureau Veritas S.A. Zweigniederlassung Hamburg  
Veritaskai 1 · 21079 Hamburg

MARINE DIVISION  
GERMAN PLAN OFFICE

VEM motors GmbH  
Attn: Mr. Wiedemann  
Carl-Friedrich-Gauß-Straße 1  
38855 Wernigerode  
GERMANY

Your ref.: email 22.07.2009  
Wolfgang WIEDEMANN  
Our ref.: **GPO.2010.00883.DH.ab**  
Contact: Dirk Hoepfner  
Phone: +49-40 – 2 36 25 - 613  
Fax: +49-40 – 2 36 25 - 622  
Email: gpo.germany@de.bureauveritas.com

Hamburg, 8 March 2010

**Ref.: File No.: ACE 04/840/01, ACE 04/840/02**

**Subject: Type Approval Certificate 05818/D0 BV, Type Approval Certificate 22096/A0 BV  
ASYNCHRONOUS MACHINES  
Cage Induction Marine Motors  
Type K11R - K22R - K10R  
Type K10R and K11R**

Dear Sir or Madam,

We are sending you the Type Approval Certificate in original which has been issued by our Society and which is intended for your use:

TAC nos.	issued on	valid to
05818/D0 BV	2 March 2010	2 March 2015
22096/A0 BV	2 March 2010	2 March 2015


Please be informed that the Type Approval Certificate is valid only if the Company manufacturing Is approved as per BV Mode. Please contact our Bureau Veritas local office for further information:

Bureau Veritas S.A. Eilenburger Str. 3 +49 341 308 549-20  
Büro Leipzig 04317 Leipzig / Germany +49 341 308 549-21

Additionally, please find enclosed herewith our invoice no.: 10002853 for the above mentioned documents.

Yours faithfully

BUREAU VERITAS S.A.  
ZWEIGNIEDERLASSUNG HAMBURG

  
Dirk Hoepfner  
Your correspondent



Udo Storm  
Head of Division

Enclosures cc:  
Veritaskai 1  
21079 Hamburg  
Germany  
Tel.: +49 40 236250  
Fax: +49 40 23625422  
www.bureauveritas.de

- BV LEIPZIG  
Bureau Veritas - Registre International de Classification de Navires et d'Aéronefs  
Société Anonyme à Directoire et Conseil de Surveillance  
67/71 Boulevard du Château, F-92571 Neuilly sur Seine Cedex  
Kapital EUR 13.032.093 Handelsregister Nr. Nanterre B 775 690 621  
Zweigniederlassung Hamburg, Handelsregister Nr. Hamburg B 60 304  
Ust-Id.-Nr. DE 118622239

Bankverbindung  
ABN AMRO Bank N.V.  
Frankfurt  
Kto.-Nr 1662570007  
BLZ 502 304 00



MARINE DIVISION

Certificate number: 05818/D0 BV

File number: ACE 04/840/01

Product code: 25841

*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 GmbH**

Wernigerode - GERMANY

*for the type of product*

**ASYNCHRONOUS MACHINES**

Cage Induction Marine Motors

Type K11R - K22R - K10R

**Requirements:**

Bureau Veritas Rules for the Classification of Steel Ships.  
IEC 60034 series - IEC 60092-301

*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: 02 Mar 2015**

**For BUREAU VERITAS,**

At BV HAMBURG, on 02 Mar 2010,

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. 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 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 :

Three phase Cage Induction Marine Motors - Type K11R..., K22R...and K10R...

Frame material	Grey cast iron
Number of poles:	2 to 8 with pole changing motors
Height of frame:	280, 315 and 355
Power supply:	220 to 690 V 50 Hz - 460 V 60 Hz
Enclosure	IP 55 -IP56
Ambient temperature:	45°C
Duty type:	S1
Insulation class:	F
Temperature rise:	F

Rated power at S1

Motor type	Motor type	kW 2 poles 50 Hz	kW 2 poles 60 Hz	kW 4 poles 50 Hz	kW 4 poles 60 Hz	kW 6 poles 50 Hz	kW 6 poles 60 Hz	kW 8 poles 50 Hz	kW 8 poles 60 Hz
K11R 280 M	K10R 250 M	/	105	/	105	/	/	/	/
K11R 315 S	K10R 280 S	110	132	110	132	/	/	/	/
K11R 315 M	K10R 280 M	132	158	132	158	/	108	/	/
K11R 315 MX	K10R 315 S	160	190	160	190	110	132	/	108
K11R 315 MY	K10R 315 M	200	225	200	225	132	158	110	132
K11R 315 L2	K10R 315 L	250	280	250	280	160	190	132	158
K11R 315 LX	K10R 315 LX	280	310	280	310	200	230	160	190
K22R 355 M2		315	340	315	340	220	240	180	200
K22R 355 MX		355	390	355	390	250	270	200	220
K22R 355 LY		400	440	400	440	315	340	250	270
K22R 355 L		450	490	/	/	/	/	/	/

### 2. DOCUMENTS AND DRAWINGS :

Catalogue VEM motors GmbH : EMW/03 - 172 E/0209.

### 3. TEST REPORTS :

Carried out according to BV Rules Pt C, Ch 2, Sec 4, Table1  
Electrical type tests report N° V 208006 - AB301020 dated 15/07/2008

### 4. APPLICATION / LIMITATION:

4.1 - Application / Limitation of use  
According to BV Rules for the Classification of Steel Ships and IEC 60092 series.

4.2 - On board installation & Maintenance requirements  
According to BV Rules for the Classification of Steel Ships and IEC 60092 series.

### 5. PRODUCTION SURVEY REQUIREMENTS:



5.1 -The cage induction marine motors are to be manufactured, examined and tested by **VEM motors GmbH Wernigerode Germany** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Arrangements shall be made for a Society's Surveyor to attend the relevant tests and examinations at manufacturer's works or to perform the relevant audits when an alternative survey scheme (BV Mode I) has been agreed. Relevant Bureau Veritas certificate will be issued after satisfactory completion of the procedure.

5.3 - **VEM motors GmbH Wernigerode Germany** has declared to Bureau Veritas that the type of product described in this certificate are manufactured at the following site:

**VEM motors GmbH  
Carl - Friedrich - Gauss - Strasse 1  
38855 Wernigerode - Germany**

**6. MARKING OF PRODUCT:**

- Name plate according to IEC 60034-1
- Stamp  on frame when BV Mode I Survey
- Stamp  on frame when individual survey

**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 the **VEM motors GmbH Wernigerode Germany** 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 supersedes the Type Approval Certificate N° 05818/C0 BV issued on 24/07/2003 by the Society.

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



MARINE DIVISION

Certificate number: 22096/A0 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 GmbH**

Wernigerode - GERMANY

*for the type of product*

**ASYNCHRONOUS MACHINES**

Cage induction Marine Motors  
Type K10R and K11R.

**Requirements:**

Bureau Veritas Rules for the Classification of Steel Ships  
IEC 60034 series - IEC 60092-301

*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: 02 Mar 2015**

**For BUREAU VERITAS,**

At BV HAMBURG, on 02 Mar 2010,

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 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 :

Three phase Cage Induction Marine Motors - Type K10R...and K11R...

Frame material	Grey cast iron
Number of poles:	2 to 8 with pole changing motors
Height of frame:	112, 132, 160, 180, 225, 250, 280 and 315
Power supply:	220 to 690 V 50 Hz - 460 V 60 Hz
Enclosure	IP 55 -IP56
Ambient temperature:	45°C
Duty type:	S1
Insulation class:	F
Temperature rise:	F

Rated power at S1

Motor type	Motor type	kW 2 poles 50 Hz	kW 2 poles 60 Hz	kW 4 poles 50 Hz	kW 4 poles 60 Hz	kW 6 poles 50 Hz	kW 6 poles 60 Hz	kW 8 poles 50 Hz	kW 8 poles 60 Hz
K11R 132 S	K10R 112 MY	5,5	6,6	/	/	/	/	/	/
K11R 132 S	K10R 112 M	/	/	5,5	6,6	3	3,6	2,2	2,6
K11R 132 M	K10R 112 MX	/	/	/	/	4	4,8	3	3,6
K11R 132 M	K10R 132 S	/	/	7,5	9	/	/	/	/
K11R 132 MX	K10R 132 S	/	/	/	/	5,5	6,6	/	/
K11R 160 M	K10R 132 S	/	/	/	/	/	/	4	4,8
K11R 160 M	K10R 132 M	11	13	11	13	7,5	9	/	/
K11R 160 MX	K10R 132 M	/	/	/	/	/	/	5,5	6,6
K11R 160 MX	K10R 160 S	15	18	/	/	/	/	/	/
K11R 160 L	K10R 160 M	18,5	22	/	/	/	/	/	//
K11R 160 L	K10R 160 S	/	/	15	18	11	13	7,5	9
K11R 180 M	K10R 160 M	22	26	17,5	20	/	/	/	/
K11R 180 L	K10R 160 M	/	/	/	/	13,5	15,5	10,5	12
K11R 180 L	K10R 180 S	/	/	22	26	/	/	15	18
K11R 200 L	K10R 180 S	/	/	/	/	18,5	21	/	/
K11R 200 L	K10R 180 M	30	36	30	34	/	/	/	/
	K10R 180 M	/	/	/	/	/	/	17,5	20
K11R 200 LX	K10R 200 M	37	44	/	/	22	26	/	/
K11R 225 S		/	/	/	/	/	/	17,5	20
K11R 225 S	K10R 200 M	/	/	37	44	/	/	/	/
K11R 225 M	K10R 200 M	/	/	/	/	30	34	22	26
K11R 225 M	K10R 200 L	45	54	43	49,5	/	/	/	/
K11R 250 M	K10R 225 M	55	66	55	63	37	42	30	36
K11R 280 S	K10R 250 S	75	90	75	90	45	54	37	44
K11R 280 M	K10R 250 M	90	/	90	/	55	66	45	54
K11R 315 S	K10R 280 S	/	/	/	/	75	90	55	66
K11R 315 M	K10R 280 M	/	/	/	/	90	/	75	90
K11R 315 MX	K10R 315 S	/	/	/	/	/	/	90	/

### 2. DOCUMENTS AND DRAWINGS :

Catalogue VEM motors GmbH : EMW/03 - 172 E/0209.

### 3. TEST REPORTS :

Carried out according to BV-Rules Pt C, Ch 2, Sec 4, Table 1

**4. APPLICATION / LIMITATION:****4.1 - Application / Limitation of use**

According to BV Rules for the Classification of Steel Ships and IEC 60092 series.

**4.2 - On board installation & Maintenance requirements**

According to BV Rules for the Classification of Steel Ships and IEC 60092 series.

**5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - The asynchronous motors described above are to be manufactured, examined and tested by **VEM motors GmbH Wernigerode Germany** in accordance with the type described in this certificate and Bureau Veritas Rules for the Classification of Steel Ships.

5.2 - Production sites are to be recognized by Bureau Veritas as per NR320 for HBV products. To this end **VEM motors GmbH Wernigerode Germany** has to make the necessary arrangements for a Society's Surveyor to perform visits and product audits at the production sites.

5.3 - **VEM motors GmbH Wernigerode Germany** has declared to Bureau Veritas that the type of product described in this certificate are manufactured at the following site:

**VEM motors GmbH  
Carl-Friedrich-Gauss-Strasse 1  
38855 Wernigerode - Germany**

**6. MARKING OF PRODUCT:**

- Name plate according to IEC 60034-1

**7. OTHERS:**

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 the **VEM motors GmbH Wernigerode Germany** 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.

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