TYPE APPROVAL CERTIFICATE

Certificate No:
TAE0000206
Revision No:
1

This is to certify:

That the Electric Motor

with type designation(s)
AC Induction Motors in accordacne with product description

Issued to
VEM motors GmbH
Wernigerode, Sachsen-Anhalt, Germany

is found to comply with
DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Degree of protection	**IP 23, IP 54, IP 55, IP 56, IP 65, IP 66**
Insulation class	**F, optional H**
Temp. class (°C)	**155, optional 180**
Voltage (V)	**up to 750 V**
Power (kW)	**0,06 kW up to 1.500 kW**
Frequency (Hz)	**50 Hz, 60 Hz, 5 ... 120 Hz**
Speed (RPM)	**250 1/min up to 3600 1/min**

Issued at **Hamburg** on **2022-02-28**

This Certificate is valid until **2027-02-27**.
DNV local station: **Magdeburg**

Approval Engineer: **Andreas Andrecht**

for **DNV**
Digitally Signed By: Schaarmann, Arne
Location: DNV GL SE Hamburg, Germany
Signing Date: 2022-02-28

Arne Schaarmann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

AC Induction Motors
Types:

- (IE*-) K…, (IE*-) W… , (IE*-) B…, 56 up to 450,
- (IE*-) P…, IE*-R… 56 up to 450,
- (IE2-) E…, 56 up to 132,
- (IE*-) Y… , 56 up to 450

Type Designation	Technical data
Sizes	56, 63, 71,80, 90, 100,112, 132, 160, 180, 200, 225, 250, 280, 315, 355, 400, 450
Rated Power (kW)	0,06 kW up to 1.500 kW
Duty type	S1 – S9
No. of poles	2, 4, 6, 8, 10, 12, 16, 24 and combinations 2, 3, and 4 pole-changeable
Synchronous speed	250 min-1 bis 3.600 min-1
Rated frequency	50 Hz, 60 Hz, 5 ... 120 Hz
Thermal class	155 (F), 180 (H)
Degree of protection	IP 23, IP 54, IP 55, IP 56, IP 65, IP 66
Standard	IEC 60034-1:2017, IEC 92-301-3rd ed- 1980 + Amd 1:1994 + Amd 2:1995 for Marine environments
Description of type	* = 1, 2, 3, 4 or 5: efficiency class in accordance with IEC 60034-30-1:2014 7 IEC TS 60034-30-2:2016
Ambient temperature	45°C , 50°C , 55°C , 60°C
Type	In accordance with IEC 60034-7

Application/Limitation

This Type Approval Certificate does not replace the requirements to DNV GL Product Certificate

Type Approval documentation

Statement_DNV_GL_emt_e_20181212 2018-12-11
Assembly drawing 05-0001:04 2022-01-31
Assembly drawing 05-0001:93 2022-01-31
VDE “Prüfbericht” (IP 55) 1993-11-18
VEM “Prüfbericht” (IP 56) 1993-08-20
DMT certificate (IP65)
Certificate DIN EN ISO 9001:2015 528878 QM15 valid until 2024-07-21
Process description "Electrical final test" ETPB_3-1.04 2018-03-01

Drawings ZA744/01.09.93, ZA745/10.09.93
IE3-W41R280M2, Rotor, 8174772.03 dated 27.02.2017

IE3-W41R280M2, Motor, SK280-755.03 dated 15.02.2017
IE4-W61R280M2, Rotor, 11893672.03 dated 27.02.2017
IE4-W61R280M2, Motor, SK280-75.03 dated 15.02.2017
Technical Data ZA744, Bl. 1-5/09.93;
441592-3000160948_mzp_WR_KPR 250 KPER 280 Welle
441592-3000209832_mzp_WR KPR 250 KPER 280 Läufer
Dimension drawing 441592-3000209840_1_mzp_WR_IE3-W43R 280M 4
Dimension drawing 441592-3000209840_2_mzp_WR_IE3-W43R 280M 4
Rotor_ET-N111120.04.02
Shaft_08-4111.51
Dimension drawing IE3-KPR80G2_DNV_B3

EW-N 1002, Bl. 13-02.2021
Datasheet / Comparison IE3 / IE4 dated 13.02.2017
VEM Catalogue “Three phase motors for marine use 2017”. EN-2/17
VEM Instruction, operating and maintenance manual, Id.-Nr. 68238 01_ec_04.2020
Type code ET-N 111106.01.01,
Type code ET-N 111106.01.02
VEM Catalogue_2017_KAP12_en

Tests carried out

According to test reports of
K10R, K20R dated 01.+ 02.12.1993 and K22R 355My4, Ser. No.137326/0001
IE4-W61R_280_M_2_420315_400_50_90kW dated 13.03.2017
IE4-W61R_315_LX_2_420317_690_50 dated 13.03.2017
IE4-W61R_315_M_2_375_50_132kW dated 13.03.2017
IE4-W61R_315_MX_2_420316_430_50_160kW dated 13.03.2017
IE4-W62R_355_MX_4_420323_624_50_400kW dated 13.03.2017
Test reports for motor IE-KPR 80 G2 DNV-GL, Nameplate F1200-I/18 2018-12-06
Test reports for motor IE-KPR100 L4 DNV-GL, Nameplate F1200-I/18 2018-12-06
Test report IB-00-083 (IP65) IB-00-083 2002-10-23
Type test protocol IE3-W43R_280_M_4_.pdf (440536),
Type test protocol IE3-KPR80G2.pdf (APZ3.1_9013399001)

Place of production

Factory: Wernigerode Sachsen-Anhalt, Germany

Factory: Zwickau, Sachsen, Germany

Marking of product

According to IEC 60034-1, clause 10.2

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the survey are:
• Inspection on factory samples, selected at random from the production line
• Review of type approval documentation
• Review of possible change in design, materials and performance
• Ensuring traceability between manufacturer’s product type marking and Type Approval Certificate.

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE