



Marine & Offshore

Certificate number: 54469/A1 BV

File number: ACE 4/895/1

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*

**WAT MOTOR SANAYI VE TICARET A.S.**  
TEKIRDAG - TURKEY

*for the type of product*

**ASYNCHRONOUS MACHINES (Power below 100kW)**  
TOTALLY ENCLOSED SQUIRREL CAGE 3 PHASE LOW VOLTAGE MOTORS

**Requirements:**

Bureau Veritas Rules for the Classification of Steel Ships  
IEC 60034-1 (2017)

*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: 09 Jul 2024**

**For Bureau Veritas Marine & Offshore,**

At BV ISTANBUL, on 21 Nov 2019,

Gurcan Yilmaz



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. 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 3 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION :

#### **SQUIRREL CAGE INDUCTION MOTORS - Types: M2E, M2H, M2HS, M3E, M3H & M3HS**

##### **Technical Specifications:**

Degree of protection:	IP 55
Shaft heights[mm]:	71, 80, 90, 100, 112, 132, 160, 180, 200, 225, 250, 280
Insulation class:	F (Temperature rise class B)
Voltage:	380-400V
Frequency:	50 Hz
Speed:	1500 to 3000 rpm
Number of poles:	2 and 4
Rated outputs:	0.25 up to 90 kW
Min/Max Ambient temperature:	-20°C / +60°C
Service (Duty):	S1 Continuous Duty acc. IEC 60034
Cooling:	IC411(standard) ; IC410 acc. IEC 60034-6

##### **Structure Of Designation:** Example M2EGPA280M4C-KI

M	Product series, Option : M
2	Efficiency grade, Options : 1, 2, 3, 4
E	Rotor / Stator design, Options : H, HS, E
G	Housing material, Options : - (Aluminum), G (Cast Iron)
PA	Motoring Mounting type, Options : -(B3), FA(B5), FC(B14a), FB(B14b), PA(B35), PC(B34a), PB(B34b)
280M	Frame number, Options : 71M, 80M, 90S, 90L, 100L, 112M, 132S, 160M, 160L, 180M, 180L, 200L, 225S, 225M, 250M, 280S, 280M
4	Pole number, Options: 2, 4, 6, 8
C	Electrial sheet package length, Options : A, AE, B, C, CE, D, DE, E
-KI	Special motor code

### 2. DOCUMENTS AND DRAWINGS :

According to documents:

- Dwg No: 6451126xx - M2E71M4C (0.25kW, IE2, 4P) dated 20-07-2018.
- Dwg No: 6451128xx - M3HS160M2C (11kW, IE3, 2P) dated 20-07-2018.
- Dwg No: 6451129xx - M2EP280M4C (90kW, IE2, 4P) dated 20-07-2018.
- Dwg No: 6451130xx - M3H200L2D (37kW, IE3, 2P) dated 18-04-2019.
- Dwg No: 6412070xx\_AD dated 25-08-2017.
- Dwg No: 6422434xx\_DG dated 22-01-2019.
- Dwg No: 6432378xx\_AS dated 27-06-2018.
- Dwg No: 6432379xx\_DL dated 28-01-2019.
- Dwg No: 6432408xx\_AR dated 21-12-2018.
- Dwg No: 6432426xx\_FV dated 10-04-2019.
- Dwg No: 6432537xx\_CZ dated 02-04-2019.
- Dwg No: 6622680xx\_AG dated 19-10-2018.
- WAT Marine Low Voltage Three Phase Motors Datasheet Rev.02, dated 11-06-2019.
- User Manual for WAT Marine Motors, Rev-2 dated 11-06-2019.

**3. TEST REPORTS :**

Manufacturer's Test reports N°s:

- 18303 dated 24-04-2019 (Motor Model: M2E71M4C; Serial No: 851732301).
- 18304 dated 24-04-2019 (Motor Model: M3H160M2C; Serial No: 951735601).
- 18305 dated 24-04-2019 (Motor Model: M2EP280M4D; Serial No: 851795801).
- 18903 dated 28-04-2019 (Motor Model: M3H200L2D; Serial No: 1190011).
- Test Report No: 043-2018 dated 10-08-2018 (M2E71M4C (0.25kW, IE2, 4P) Water Ingress Test Report).
- Test Report No: 044-2018 dated 10-08-2018 (M2E71M4C (0.25kW, IE2, 4P) Dust Ingress Test Report).
- Test Report No: 045-2018 dated 10-08-2018 (M3HS160M2C (11kW, IE3, 2P) Water Ingress Test Report).
- Test Report No: 046-2018 dated 10-08-2018 (M3HS160M2C (11kW, IE3, 2P) Dust Ingress Test Report).
- Test Report No: 1810.02 dated 26-10-2018 (M2EP280M4C (90kW, IE2, 4P) Dust Ingress Test Report).
- Test Report No: 032-2019 dated 14-04-2019 (M2EP280M4C) IP Test Report.
- Test Report No: 033-2018 dated 12-04-2019 (M3H200L2D-KI) IP Test Report.

**4. APPLICATION / LIMITATION :**

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

**5. PRODUCTION SURVEY REQUIREMENTS :**

5.1 - The above products are to be supplied by **WAT MOTOR SANAYI VE TICARET A.S.** 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 - **WAT MOTOR SANAYI VE TICARET A.S.** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **WAT MOTOR SANAYI VE TICARET A.S.** has declared to Bureau Veritas the following production site(s):

**KARAAGAC MAH.**

**8. SK. 4 A2**

**59510 KAPAKLI**

**TEKIRDAG**

**TURKEY**

**6. MARKING OF PRODUCT :**

- According to IEC 60034.1.

- Society's brand as relevant.

**7. OTHERS:**

7.1 - It is **WAT MOTOR SANAYI VE TICARET A.S.**'s responsibility 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° 54469/A0 BV issued on 09 Jul 2019 by the Society.

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