

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Motor

with type designation(s)

Induction Motors (Cast Iron Frame): M3BP 71 up to M3BP 450 & M2BAX 71 up to M2BAX 355

Issued to

**ABB Oy, Motors and Generators / Vaasa
VAASA, Finland**

is found to comply with

DNV GL 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.

Enclosure class	IP 55, IP 56
Insulation class	155 (F), 180 (H)
Temp. class (°C)	+45
Voltage (V)	220 V up to 690 V
Power (kW)	0,12 kW up to 1100 kW
Frequency (Hz)	50 Hz, 60 Hz
Speed (RPM)	500 up to 3600
Duty type	S1, S2...S9 acc. to IEC standard

This Certificate is valid until **2021-02-23**.

Issued at **Høvik** on **2016-09-09**

for **DNV GL**

DNV GL local station: **Helsinki**

Approval Engineer: **Hanwee Low**

Trond Sjøvåg
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

Type:

M3BP 71 up to M3BP 450

M2BAX 71 up to M2BAX 355

Places of manufacturing:

ABB Oy, Motors and Generators, Strömbergin Puistotie 5A, 65320 Vaasa, Finland

ABB Sp. z o.o. , Placydowska 27, 95-070 Aleksandrow Lodzki, Poland

ABB Shanghai Motors Co., Ltd., Shanghai, China

Environmental categories according to DNVGL-CG-0339:

Temperature Class:	D
Vibration Class:	B
Humidity Class:	B

Application/Limitation

Higher ambient temperatures are allowed but the insulation temperature class 155 (F) or 180 (H) shall be respected.

Type Approval documentation

Tests carried out

According to IEC 60034-1:2010-02, IEC 92-301-3rd ed.1980 + Amd 1:1994 + Amd 2:1995

GL Test Requirements for Electrical Machinery (VI-7-6), edition 1999

Marking of product

According to IEC 60034-1 clause 10.2, at least

- Manufacturers name and type designation
- Serial number and date of manufacture
- Voltage, frequency, rpm
- Power class (kW / kVA)
- Winding insulation class
- Degree of protection

Periodical assessment

The scope of the retention/renewal survey 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 (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- 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.

Survey to be performed at least every second year.

END OF CERTIFICATE