DNV·GL

Certificate No:
TAE00001C9

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Motor

with type designation(s)
M2QA

Issued to
ABB Shanghai Motors Co., Ltd.
Shanghai 020, China

is found to comply with
DNV GL rules for classification – Ships and offshore units

Application :

For installation in non hazardous area.

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

Degree of protection	**IP55 and IP56**
Thermal class	**155 (F)**
Ambient temperature (°C)	**50**
Voltage (V)	**200 - 690**
Power (kW)	**0.18 - 362.5**
Frequency (Hz)	**50 and 60**
Speed (RPM)	**750 - 3600**

This Certificate is valid until **2021-08-30**.

Issued at **Hamburg** on **2016-08-31**

for **DNV GL**

DNV GL local station: **Shanghai**

Approval Engineer: **Heinz-Dieter Hespe**

Duy Nam Le
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.

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Product description

Type **M2QA**
3-phase cast iron induction motor for non hazardious area, IEC 60034-1, IEC frame.
Frame sizes: 71 to 355.

Rated Voltage:	200 V - 690 V
Rated Frequency:	50Hz and 60Hz
Number of poles:	2, 4, 6 and 8
Duty type:	S1
Degree of protection:	IP55 and IP56
Ambient temperature:	50 °C
Thermal class:	155 (F), temperature rise 155 (F)

Type designation	**Output Power 60 Hz (kW)**	**Type designation**	**Output Power 60 Hz (kW)**
2 Pole		**6 Pole**	
M2QA 71 M2A	0.43	M2QA 71 M6A	0.21
M2QA 71 M2B	0.63	M2QA 71 M6B	0.29
M2QA 80 M2A	0.86	M2QA 80 M6A	0.43
M2QA 80 M2B	1.27	M2QA 80 M6B	0.63
M2QA 90 S2A	1.73	M2QA 90 S6A	0.86
M2QA 90 L2A	2.53	M2QA 90 L6A	1.27
M2QA 100 L2A	3.45	M2QA 100 L6A	1.73
M2QA 100 L2B	-	M2QA 100 L6B	-
M2QA 112 M2A	4.60	M2QA 112 M6A	2.53
M2QA 132 S2A	6.33	M2QA 132 S6A	3.45
M2QA 132 S2B	8.6	M2QA 132 S6B	-
M2QA 132 M2A	-	M2QA 132 M6A	4.60
M2QA 132 M2B	-	M2QA 132 M6B	6.33
M2QA 160 M2A	12.7	M2QA 160 M6A	8.6
M2QA 160 M2B	17.3	M2QA 160 M6B	-
M2QA 160 L2A	21.3	M2QA 160 L6A	12.7
M2QA 180 M2A	25.3	M2QA 180 M6A	-
M2QA 180 L2A	-	M2QA 180 L6A	17.3
M2QA 200 L2A	34.5	M2QA 200 L6A	21.3
M2QA 200 L2B	42.6	M2QA 200 L6B	25.3
M2QA 225 S2A	-	M2QA 225 S6A	-
M2QA 225 M2A	51.8	M2QA 225 M6A	34.5
M2QA 250 M2A	63	M2QA 250 M6A	42.6
M2QA 280 S2A	86	M2QA 280 S6A	51.8
M2QA 280 M2A	104	M2QA 280 M6A	63
M2QA 315 S2A	127	M2QA 315 S6A	86
M2QA 315 M2A	152	M2QA 315 M6A	104
M2QA 315 L2A	184	M2QA 315 L6A	127
M2QA 315 L2B	230	M2QA 315 L6B	152
M2QA 355 M2A	287.5	M2QA 355 M6A	184
M2QA 355 M2B	-	M2QA 355 M6B	230
M2QA 355 L2A	362.5	M2QA 355 L6A	287.5
M2QA 355 L2B	-	M2QA 355 L6B	-

Type designation	Output Power 60 Hz (kW)	Type designation	Output Power 60 Hz (kW)
4 Pole		**8 Pole**	
M2QA 71 M4A	0.29	M2QA 71 M8A	-
M2QA 71 M4B	0.43	M2QA 71 M8B	-
M2QA 80 M4A	0.63	M2QA 80 M8A	-
M2QA 80 M4B	0.86	M2QA 80 M8B	-
M2QA 90 S4A	1.27	M2QA 90 S8A	-
M2QA 90 L4A	1.73	M2QA 90 L8A	-
M2QA 100 L4A	2.53	M2QA 100 L8A	0.86
M2QA 100 L4B	3.45	M2QA 100 L8B	1.27
M2QA 112 M4A	4.60	M2QA 112 M8A	1.73
M2QA 132 S4A	6.33	M2QA 132 S8A	2.53
M2QA 132 S4B	-	M2QA 132 S8B	-
M2QA 132 M4A	8.6	M2QA 132 M8A	3.45
M2QA 132 M4B	-	M2QA 132 M8B	-
M2QA 160 M4A	12.7	M2QA 160 M8A	4.60
M2QA 160 M4B	-	M2QA 160 M8B	6.33
M2QA 160 L4A	17.3	M2QA 160 L8A	8.6
M2QA 180 M4A	21.3	M2QA 180 M8A	-
M2QA 180 L4A	25.3	M2QA 180 L8A	12.7
M2QA 200 L4A	34.5	M2QA 200 L8A	17.3
M2QA 200 L4B	-	M2QA 200 L8B	-
M2QA 225 S4A	42.6	M2QA 225 S8A	21.3
M2QA 225 M4A	51.8	M2QA 225 M8A	25.3
M2QA 250 M4A	63	M2QA 250 M8A	34.5
M2QA 280 S4A	86	M2QA 280 S8A	42.6
M2QA 280 M4A	104	M2QA 280 M8A	51.8
M2QA 315 S4A	127	M2QA 315 S8A	63
M2QA 315 M4A	152	M2QA 315 M8A	86
M2QA 315 L4A	184	M2QA 315 L8A	104
M2QA 315 L4B	230	M2QA 315 L8B	127
M2QA 355 M4A	287.5	M2QA 355 M8A	152
M2QA 355 M4B	-	M2QA 355 M8B	184
M2QA 355 L4A	362.5	M2QA 355 L8A	230
M2QA 355 L4B	-	M2QA 355 L8B	-

Application/Limitation

For installation in non hazardous area.

Type Approval documentation

Technical information:
ABB Motors Shanghai Co Ltd. ”Technical Specification for M2QA Series 3-Phase Asynchrone Marine Motors” – doc. no. Q/JBQS 33-2009 issued 2009-06-03.

Drawings:
8AD.200.551 and 8AD.200.252

Tests carried out

Temperature, Overload, Overspeed, Insulation resistance, Winding resistance, No load.

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