



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. E-9146
This Certificate consists of 5 pages

This is to certify that the
Electric Motor
with type designation(s)
M3BP

Manufactured by
ABB Oy, Motors,
Finland

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application
For installation in non hazardous area.

Enclosure class	IP55, 56, 65 & 66
Insulation class	F & H
Temp. class (°C)	45
Voltage (V)	220 - 690
Power (kW)	2,2 - 1100
Frequency (Hz)	50 - 60
Speed (RPM)	500 - 3600

Place and date
Høvik, 2008-08-20
for DET NORSKE VERITAS AS

Trond Sjøvåg
Trond Sjøvåg
Head of Section



Local Office
DNV Helsinki

This Certificate is valid until
2011-12-31

Roger Thomas Volden
Roger Thomas Volden
Surveyor *lvaben*

Notice: 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.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



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File No.: 821.20

Product description

Type M3BP, 3-phase squirrel cage induction motors acc. to IEC 60034, IEC frame of cast iron, frame sizes 160 up to 400.

Rated Voltage:	220 - 690
Rated Frequency:	50Hz, 60Hz
Nominal power:	2.2 - 780 kW
Number of poles:	2, 4, 6, 8, 10, 12, multiple poles
Duty type:	S1 - S9
Enclosure class:	IP55, 56, 65 & 66
Ambient air temp.:	45 deg. C
Insulation class:	F & H

Technical data for 440V and 60 Hz:

Type designation	Nom. Power	Type designation	Nom. Power
2 Pole		6 Pole	
M3BP 160MA	14.5	M3BP 160M	9.8
M3BP 160M	17.5	M3BP 160L	13
M3BP 160L	21	M3BP 180L	18
M3BP 180M	26	M3BP 200MLA	22
M3BP 200MLA	35	M3BP 200MLB	26
M3BP 200MLB	43	M3BP 225SMB	35
M3BP 225SMB	54	M3BP 250SMA	43
M3BP 250SMA	65	M3BP 280SMA	55
M3BP 280SMA	90	M3BP 280SMB	63
M3BP 280SMB	105	M3BP 315SMA	86
M3BP 315SMA	125	M3BP 315SMB	105
M3BP 315SMB	155	M3BP 315SMC	125
M3BP 315SMC	185	M3BP 315MLA	150
M3BP 315MLA	230	M3BP 355SMA	195
M3BP 355SMA	290	M3BP 355SMB	230
M3BP 355SMB	362	M3BP 355SMC	300
M3BP 355SMC	410	M3BP 355MLB	360
M3BP 355MLA	450	M3BP 355LKA	400
M3BP 355MLB	510	M3BP 355LKB	440
M3BP 355LKA	575	M3BP 400LA	450
M3BP 355LKB	620	M3BP 400LKA	450
M3BP 400LA	630	M3BP 400LB	510
M3BP 400LKA	630	M3BP 400LKB	510
M3BP 400LB	710	M3BP 400LC	560
M3BP 400LKB	710	M3BP 400LKC	560
M3BP 400LC	780	M3BP 400LD	630
M3BP 400LKC	780	M3BP 400LKD	630



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Type designation	Nom. Power	Type designation	Nom. Power
M3BP 450LA	900	M3BP 450LA	710
M3BP 450LB	1000	M3BP 450LB	800
		M3BP 450LB	900
4 Pole		8 Pole	
M3BP 160M	15,5	M3BP 160MA	5.2
M3BP 160L	18	M3BP 160M	6.4
M3BP 180M	22	M3BP 160L	8.6
M3BP 180L	26	M3BP 180L	13,5
M3BP 200MLB	38	M3BP 200MLA	18
M3BP 225SMA	44	M3BP 225SMA	21
M3BP 225SMB	55	M3BP 225SMB	25
M3BP 250SMA	65	M3BP 250SMA	34
M3BP 280SMA	88	M3BP 280SMA	43
M3BP 280SMB	105	M3BP 280SMB	55
M3BP 315SMA	125	M3BP 315SMA	63
M3BP 315SMB	150	M3BP 315SMB	85
M3BP 315SMC	185	M3BP 315SMC	105
M3BP 315MLA	230	M3BP 315MLA	125
M3BP 355SMA	288	M3BP 355SMA	155
M3BP 355SMB	362	M3BP 355SMB	185
M3BP 355SMC	400	M3BP 355SMC	230
M3BP 355MLA	450	M3BP 355MLB	285
M3BP 355MLB	500	M3BP 355LKB	330
M3BP 355LKA	575	M3BP 400LA	360
M3BP 355LKB	620	M3BP 400LKA	360
M3BP 400LA	630	M3BP 400LB	400
M3BP 400LKA	630	M3BP 400LKB	400
M3BP 400LB	710	M3BP 400LC	450
M3BP 400LKB	710	M3BP 400LKC	450
M3BP 400LC	780	M3BP 450LA	500
M3BP 400LKC	780	M3BP 450LB	560
M3BP 450LA	900	M3BP 450LC	630
M3BP 450LB	1000	M3BP 450LD	710
M3BP 450LC	1100		

Application/Limitation

For installation in non hazardous area.

For installation on open deck Rules Pt.4, Ch.8, Sec.10 table B1 to be followed.



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Type Approval documentation

ABB catalogue "DriveIT Low Voltage Marine Motors", issued 2004 (partly).

Drawings: 3GZF183028-1/2, 3GZF183031-1/2/3/4/10/12, 3GZF500716-40/43, 3GZF500720-36, 3GZF500728-27/32, 3GZF 183035-1/2/4/5/6/7, 3GZF101735-C, 3GZF 183040-2/4/5, 3GZF101740-C/G, 3GZF1183045-3 Rev B and 3GZF101745-E Rev B.

Test reports: ABB test procedure "Final Testing of MOTORS manufactured by fimot" version A dated 1999-12-12. Type test of M3BP 250SMB 10, M3BP 355SMA 2, 4 & 8, M3BP 355MLA 2&4, M3BP 355MLB 2, 6 & 8, M3BP 355LKA 4, M3BP 355LKB 6, M3BP 355MA 6, M3BP 400LKB 2 & 4, M3BP 400LKB 4, M3BP 400LC 6 & 8, M3BP 400LKD 6, Test report dated 2007-11-29 on type M3BP 450LC 4 B3.

ABB Test report "Impact resistance and IP-protection of a motor...ref no.9AFX00-133 rev., dated 2000-08-21.

Tests carried out

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

Marking of product

The motors are to be marked with the following specifications:

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



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Certificate retention survey

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 every second year.

END OF CERTIFICATE