



# DET NORSKE VERITAS

## TYPE APPROVAL CERTIFICATE

**CERTIFICATE NO. E-9163**  
This Certificate consists of 6 pages

*This is to certify that the*  
**Electric Motor**  
*with type designation(s)*  
**M3HP and M3GP**

*Manufactured by*  
**ABB Oy, Motors,**  
Finland

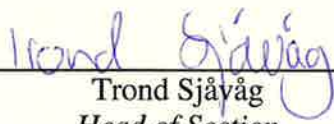
*is found to comply with*  
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det  
Norske Veritas' Offshore Standards

*Application*  
For installation in hazardous area.

Enclosure class	IP55, 56, 65, & 66
Insulation class	F & H
Temp. class (°C)	45
Voltage (V)	220 - 690
Power (kW)	2,2 - 780
Frequency (Hz)	50 - 60
Speed (RPM)	500 - 3600

*Place and date*  
Høvik, 2008-09-26


for DET NORSKE VERITAS AS

  
Trond Sjøvåg  
Head of Section



Local Office  
DNV Helsinki

*This Certificate is valid until*  
2011-12-31

  
Nicolay Horn  
Surveyor

RTV

**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 M3HP (increased safety) and M3GP (non-sparking)  
3-phase squirrel cage induction motors acc to IEC/EN-standards, IEC frame of cast iron for hazardous areas, frame sizes 160 up to 400.

Rated Voltage:	220 - 690 V	
Rated Frequency:	50Hz, 60Hz	
Nominal Power:	2.2 - 400 kW (EExe or Exe)/ 3.5 - 780 kW (EExnA or ExnA)	
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 °C	
Ex class:	M3HP	E(E)x e II T3 or E(E)x e II T2
	M3GP	E(E)x nA II T1, T2 or T3
Insulation class:	F & H	

Technical data for M3HP and 400 V, 50 Hz, class F, rise class B:

Type designation	Nom. Power	Type designation	Nom. Power
<b>2 Pole</b>		<b>6 Pole</b>	
M3HP 160 MLB	8	M3HP 160 MLB	6.6
M3HP 160 MLC	11	M3HP 160 MLC	7.5
M3HP 160 MLD	12.5	M3HP 160 MLD	11
M3HP 180 MLB	15	M3HP 180 MLB	14
M3HP 180 MLC	18	M3BP 200 MLB	16.5
M3HP 200 MLC	22	M3HP 200 MLC	20
M3HP 200 MLE	25	M3HP 225 SMC	30
M3HP 225 SMB	30	M3HP 250 SMB	37
M3HP 225 SMD	36	M3HP 280 SMA	45
M3HP 250 SMA	40	M3HP 280 SMB	50
M3HP 250 SMB	47	M3HP 280 SMC	62
M3HP 280 SMA	60	M3HP 315 SMA	72
M3HP 280 SMB	75	M3HP 315 SMB	85
M3HP 280 SMC	80	M3HP 315 SMC	100
M3HP 315 SMA	77	M3HP 315 MLA	120
M3HP 315 SMB	90	M3HP 315 MLA	135
M3HP 315 SMC	120	M3HP 355 SMA	150
M3HP 315 MLA	135	M3HP 355 SMB	180
M3HP 355 SMA	175	M3HP 355 MLB	230
M3HP 355 SMB	200	M3HP 355 LKA	260
M3HP 355 MLA	220	M3HP 400 LA	300
M3HP 355 LKC	300	M3HP 400 LKA	300
M3HP 400 LB	355	M3HP 400 LB	350



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Type designation	Nom. Power	Type designation	Nom. Power
M3HP 400 LKB	355	M3HP 400 LKB	350
M3HP 400 LC	400	-	-
M3HP 400 LKC	400	-	-
<b>4 Pole</b>		<b>8 Pole</b>	
M3HP 160 MLC	11	M3HP 160 MBA	3.5
M3HP 160 MLE	15	M3HP 160 MLB	4.8
M3HP 180 MLB	17	M3HP 160 MLC	6.6
M3HP 180 MLC	20	M3HP 180 MLB	9.7
M3HP 200 MLB	26	M3HP 200 MLB	15
M3HP 200 MLC	30	M3HP 225 SMC	22
M3HP 225 SMB	38	M3HP 250 SMA	27
M3HP 225 SMC	43	M3HP 250 SMB	32
M3HP 250 SMA	50	M3HP 280 SMA	37
M3HP 250 SMB	60	M3HP 280 SMB	45
M3HP 280 SMA	65	M3HP 280 SMC	55
M3HP 280 SMB	75	M3HP 315 SMA	55
M3HP 280 SMC	82	M3HP 315 SMB	75
M3HP 315 SMA	95	M3HP 315 SMC	90
M3HP 315 SMB	110	M3HP 315 MLA	105
M3HP 315 SMC	128	M3HP 355 SMB	132
M3HP 315 MLA	145	M3HP 355 SMC	150
M3HP 355 SMA	190	M3HP 355 MLB	180
M3HP 355 SMB	230	M3HP 355 LKB	215
M3HP 355 MLA	280	M3HP 400 LA	230
M3HP 355 LKA	310	M3HP 400 LKA	230
M3HP 400 LA	350	M3HP 400 LB	280
M3HP 400 LKA	350	M3HP 400 LKB	280
M3HP 400 LC	390	M3HP 400 LC	315
M3HP 400 LKC	390	M3HP 400 LKC	315

Technical data for M3GP and 400 V, 50 Hz, class F, rise class B:

Type designation	Nom. Power	Type designation	Nom. Power
<b>2 Pole</b>		<b>6 Pole</b>	
M3GP 160 MLA	11	M3GP 160 MLA	7.5
M3GP 160 MLB	15	M3GP 160 MLB	11
M3GP 160M LC	18.5	M3GP 180 MLB	15
M3GP 180 MLA	22	M3GP 200 MLA	18.5
M3GP 200 MLA	30	M3GP 200 MLB	22
M3GP 200 MLC	37	M3GP 225 SMB	30
M3GP 225 SMB	45	M3GP 250 SMA	37
M3GP 250 SMA	55	M3GP 280 SMA	45
M3GP 280 SMA	75	M3GP 280 SMB	55



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Type designation	Nom. Power	Type designation	Nom. Power
M3GP 280 SMB	90	M3GP 315 SMA	75
M3GP 315 SMA	110	M3GP 315 SMB	90
M3GP 315 SMB	132	M3GP 315 SMC	110
M3GP 315 SMC	160	M3GP 315 MLA	132
M3GP 315 MLA	200	M3GP 355 SMA	160
M3GP 355 SMA	250	M3GP 355 SMB	200
M3GP 355 SMB	315	M3GP 355 SMC	250
M3GP 355 SMC	355	M3GP 355 MLA	315
M3GP 355 MLA	400	M3GP 355 MLB	355
M3GP 355 MLB	450	M3GP 400 LA	400
M3GP 355 LKA	500	M3GP 400 LKA	400
M3GP 355 LKB	560	M3GP 400 LB	450
M3GP 400 LA	560	M3GP 400 LKB	450
M3GP 400 LKA	560	M3GP 400 LC	500
M3GP 400 LB	630	M3GP 400 LKC	500
M3GP 400 LKB	630	M3GP 400 LD	560
M3GP 400 LC	710	M3GP 400 LKD	560
M3GP 400 LKC	710	-	-
<b>4 Pole</b>		<b>8 Pole</b>	
M3GP 160 MLC	11	M3GP 160 MLA	4
M3GP 160 MLE	15	M3GP 160 MLB	5.5
M3GP 180 MLA	18.5	M3GP 160 MLC	7.5
M3GP 180 MLB	22	M3GP 180 MLB	11
M3GP 200 MLB	30	M3GP 200 MLA	15
M3GP 225 SMB	37	M3GP 225 SMA	18.5
M3GP 225 SMC	45	M3GP 225 SMB	22
M3GP 250 SMA	55	M3GP 250 SMA	30
M3GP 280 SMA	75	M3GP 280 SMA	37
M3GP 280 SMB	90	M3GP 280 SMB	45
M3GP 315 SMA	110	M3GP 315 SMA	55
M3GP 315 SMB	132	M3GP 315 SMB	75
M3GP 315 SMC	185	M3GP 315 SMC	90
M3GP 315 MLA	230	M3GP 315 MLA	110
M3GP 355 SMA	250	M3GP 355 SMA	132
M3GP 355 SMB	315	M3GP 355 SMB	160
M3GP 355 SMC	355	M3GP 355 SMC	200
M3GP 355 MLA	400	M3GP 355 MLB	250
M3GP 355 MLB	450	M3GP 400 LA	315
M3GP 355 LKA	500	M3GP 400 LKA	315
M3GP 400 LA	560	M3GP 400 LB	355
M3GP 400 LKA	560	M3GP 400 LKB	355
M3GP 400 LB	630	M3GP 400 LC	400
M3GP 400 LKB	630	M3GP 400 LKC	400
M3GP 400 LC	710	-	-
M3GP 400 LKC	710	-	-



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### Application/Limitation

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

### Type Approval documentation

#### Technical info:

ABB catalogue "Drive IT Low Voltage Motors for Hazardous Environments", issued 2002-04 (partly).

#### Drawings:

3GZF183028-1/2, 3GZF183031-1/2/3/4/10/12, 3GZF500716-40/43, 3GZF500720-36, 3GZF500728-27/32, 3GZF183035-1/2/4/5/6/7, 3GZF183040-2/4/5.

#### Test reports:

ABB test procedure "Final Testing of MOTORS manufactured by fimot" version A dated 1999-12-12. Type test of M3GP 280SMA, M3GP 315 SMA certificate no. LCIE nr. 02.001, issued 2002-08-10, 2002-10-02, M3GP 160 MLB, M3GP 250 SMA, M3GP 200MLA certificate no. LCIE EX nr. 00.016, issued 2001-07-14, 2001-09-12 and 2001-10-13. Type tests of M3HP 160MLB, M3HP 160MLC, M3HP 160MLD, M3HP 160MLE certificate no. LCIE 01 ATEX.6015, issued 2000-10-26, 2001-11-06, 2001-09-08 and 2001-06-17, M3HP 180MLC, certificate no. LCIE 01 ATEX.6021 issued 2001-12-25, M3HP 200MLE, M3HP 200MLA & M3HP 200MLB certificate no. LCIE 01 ATEX.6022 issued 2001-11-16 & 2001-01-19, M3HP 280SMA & M3HP 280SMA certificate no. LCIE 02 ATEX.6071 issued 2002-08-13 & 2002-03-06, M3HP 315 SMA, M3HP 315 SMC & M3HP 315 MLA certificate no. LCIE 02 ATEX.6072 issued 2002-11-06, 2002-12-09 & 2002-10-31, certificate noS. LCIE EX02.018 and LCIE 02 ATEX 6195, ABB Test Report "Impact resistance and IP-protection of a motor...ref. no. 9AFX00-133 rev. 1, dated 2000-08-21.

### Tests carried out

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

### Marking of product

- 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 at least every second year.

**END OF CERTIFICATE**