DNV·GL

Certificate No:
E-13298
File No:
821.20
Job Id:
262.1-004717-2

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Electric Motor

with type designation(s)
M3LP

Issued to
ABB Oy, Motors and Generators / Vaasa
Vaasa, 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 :

Enclosure class	**IP55, 56, 65 & 66**
Insulation class	**F & H**
Temp. class (°C)	**45**
Voltage (V)	**220 - 690**
Power (kW)	**60 - 1350**
Frequency (Hz)	**50 - 60**
Speed (RPM)	**750 - 1800**

This Certificate is valid until **2017-12-31**.
Issued at **Høvik** on **2015-03-19**

DNV GL local station: **Turku**

Approval Engineer: **Nicolay Horn**

for **DNV GL**
Digitally Signed By: Laumann, Marit
Location: DNV GL Høvik, Norway
Signing Date: 2015-04-30

Marit Laumann
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 M3LP, 3-phase squirrel cage induction motors acc. to IEC 60034. Motor sizes 280 and 315 have casted aluminum frame with stainless steel cooling water tubes inside the casting. Sizes 355 to 450 have steel frame. Bearing housing and terminal box are of cast iron

Rated Voltage:	220 - 690
Rated Frequency:	50Hz, 60Hz
Nominal power:	60 - 1350 kW
Number of poles:	4, 6 & 8
Duty type:	S1
Enclosure class:	IP55, 56, 65 & 66
Ambient air temp.:	45 deg. C
Insulation class:	F & H

Technical data for 440Vand 60 Hz:

4-pole motors

Motor	Frame size	Type	Pole number	Output kW
M3LP	280	SMA	4	100
M3LP	280	SMB	4	125
M3LP	280	SMC	4	145
M3LP	280	SMD	4	175
M3LP	280	SME	4	200
M3LP	315	MC	4	225
M3LP	315	MLA	4	275
M3LP	315	KHA	4	330
M3LP	315	MLA	4	362
M3LP	315	KHB	4	375
M3LP	315	KHC	4	400
M3LP	355	MLB	4	400
M3LP	355	MLC	4	450
M3LP	355	MLD	4	500
M3LP	355	MLE	4	560
M3LP	355	LKA	4	630
M3LP	355	LKB	4	710
M3LP	400	LA	4	800
M3LP	400	LB	4	880
M3LP	400	LC	4	950
M3LP	450	LA	4	1100
M3LP	450	LB	4	1220
M3LP	450	LC	4	1350

6-pole motors

Motor	Frame size	Type	Pole number	Output kW
M3LP	280	SME	6	95
M3LP	315	MB	6	115
M3LP	315	MC	6	145
M3LP	315	MLA	6	175

Motor	Frame size	Type	Pole number	Output kW
M3LP	315	MLB	6	200
M3LP	315	KHA	6	240
M3LP	315	KHB	6	270
M3LP	315	KHC	6	335
M3LP	355	MLA	6	280
M3LP	355	MLB	6	350
M3LP	355	MLC	6	400
M3LP	355	MLD	6	450
M3LP	355	LKA	6	500
M3LP	355	LKB	6	560
M3LP	400	LA	6	630
M3LP	400	LB	6	710
M3LP	400	LC	6	800
M3LP	400	LD	6	900
M3LP	450	LA	6	950
M3LP	450	LB	6	1020
M3LP	450	LC	6	1150

8-pole motors

Motor	Frame size	Type	Pole number	Output kW
M3LP	280	SMA	8	60
M3LP	280	SMC	8	80
M3LP	315	MB	8	100
M3LP	315	MC	8	125
M3LP	315	MLA	8	145
M3LP	315	KHA	8	175
M3LP	315	KHC	8	220
M3LP	355	MLA	8	185
M3LP	355	MLB	8	230
M3LP	355	MLC	8	285
M3LP	355	LKA	8	362
M3LP	355	LKB	8	400
M3LP	400	LA	8	450
M3LP	400	LB	8	500
M3LP	400	LC	8	560
M3LP	450	LA	8	630
M3LP	450	LB	8	710
M3LP	450	LC	8	800
M3LP	450	LD	8	900

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.

Type Approval documentation

ABB letter "MOTORS TYPES FOR TYPE APPROVAL CERTIFICATE APPLICATION", dated 2007-12-14.

Drawings and test reports: ABB Binder "Type approval Application – Low Voltage Electric Motor M3LP" dated 2008-08-27.

Additional test reports: ABB Test Reports (5 types) issued 2014-11-05, Certificate no. NV HEL 09-1977 issued 2009-04-06, Certificate no. NV HEL-09-2955 issued 2009-08-20, & Certificate no. NV HEL 07-2986 issued 2007-11-21.

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

Periodical assessment

The scope of the periodical assessment 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