IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx FTZU 13.0027	Issue No: 0	Certificate history: Issue No. 0 (2014-01-17)
Status:	**Current**	Page 1 of 3	
Date of Issue:	**2014-01-17**		
Applicant:	**Siemens AG** Industry Sector, Drive Technologies Division, Large Drives **Germany**		
Electrical Apparatus:	**Three-phase asynchronous motors 1MB1511-..., 1MB1513-..., 1MB1611-..., 1MB1613-..., frame size: -2B..., -2C..., -2D..., -3A..., (225 to 315)**		
Optional accessory:			
Type of Protection:	**Dust explosion protection by enclosure "tb"**		
Marking:	Ex tb IIIC T120°C Db or Ex tb IIIC T130°C Db		

Approved for issue on behalf of the IECEx Certification Body: Dipl. Ing. Lukáš Martinák

Position: Head of the Certification Body

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

Fyzikalne technicky zkusebni ustav
(Physical -Technical Testing Institute)
Pikartska 7
71607 Ostrava - Radvanice
Czech Republic

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Manufacturer:	**Siemens AG** Industry Sector, Drive Technologies Division, Large Drives **Germany**	
Additional Manufacturing location(s):		

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-31 : 2008 Edition:1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

CZ/FTZU/ExTR13.0027/00

Quality Assessment Report:

DE/BVS/QAR09.0009/04

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The electric motors type 1MB1511-..., 1MB1513-..., 1MB1611-... and 1MB1613-... are designed for application in explosive dust atmosphere and have explosion protection by cover "t".
These electric motors are low voltage asynchronous squirrel cage motors. They have surface cooling with external fan fastened on shaft of electric motor.
The enclosures of electric motor and terminal box are made of cast iron. The fans and fan covers are made of steel plate. The axial fans are made from aluminium alloy. The shaft is fastened in roller bearings. The squirrel cage is made from die-cast of aluminium.
The connection design of separate parts and used sealing materials ensure degree of protection provided by cover IP 65 or IP66. For sealing of contact surfaces of electric motor body and terminal box and detachable parts of terminal box are used gaskets or special profile silicone sealing. The shaft sealing of electric motor in enclosure alternatively provides: a DIN3760 shaft sealing ring or V-ring shaft sealing. Material of these sealing rings is normally FPM. For service temperature and ambient temperature below -20°C are used sealing rings from HNBR or NBR. The shaft sealing V-ring is protected with additional stainless steel cover. The flange motors designed for assembly on gear boxes use a radial shaft sealing for oil sealing.
The electric connection is made in terminal box that is equipped with connection terminals. Alternatively permanently connected cable can be used. For both variant the entry of cable into the terminal box provide Ex cable glands separately certified for EPL Db and ensure degree of protection IP65 at least.
The electric motor windings could be optionally equipped with temperature sensors PTC, KTY, or resistance temperature sensors. Inside of electric motor can be also installed heating units for prevention of wet air condensation when the electric motor is switched off. The application of heaters type RSV that are certified Ex components with type of protection – increased safety "e", certificate IECEx SIR 10.0151U was verified.
Electrical parameters of basic versions of electric motors are given in annex to this certificate.

General technical parameters:

Ambient temperature:
-20°C ≤ Ta ≤ 40°C, or
-40°C ≤ Ta ≤ 40°C for electrical motors with alternative materials,
-20°C ≤ Ta ≤ 60°C with decreased output power of electrical motors,
-40°C ≤ Ta ≤ 60°C for electrical motors with alternative materials and with decreased output power.

Insulation class: F
Degree of protection: IP65, IP66

Motors supplied by voltage with frequency 50 Hz:
Voltage: from 200 V to 690 V, voltage tolerances: ±10%
Outputs: from 18,5 kW to 200 kW
Duty type: S1
Number of poles: 2, 4, 6, 8

Motors supplied by voltage with frequency 60 Hz:
Voltage: from 220 V to 690 V, voltage tolerances: ±10%
Outputs: from 22 kW to 230 kW
Duty type: S1
Number of poles: 2, 4, 6, 8

CONDITIONS OF CERTIFICATION: NO

Annex:

Annex_to_IECEx_FTZU_13_0027.pdf

Annex No.1 to IECEx FTZU 13.0027

Manufacturer: **Siemens AG,**
Industry Sector, Drive Technologies Division, Large Drives

Address: **Vogelweiherstraße 1-15, 90441 Nürnberg, Germany**

Equipment: **Three-phase asynchronous motors types**
1MB1511-..., 1MB1513-..., 1MB1611-..., 1MB1613-...,
frame size: -2B... to -3A... (225 to 315)

Rated parameters of basic versions of electric motors **Ex tb IIIC Tx°C Db:**

Type	400 V 50Hz				460 V 60Hz			
	Output [kW]	Current [A]	Speed [min^{-1}]	Tx	Output [kW]	Current [A]	Speed [min^{-1}]	Tx
2-pole	(3000 min^{-1}) IE2				(3600 min^{-1})			
1MB1511-2BA	45	79	2965	120°C	51	78	3565	120°C
1MB1511-2CA	55	96	2970		62	94	3570	
1MB1511-2DA	75	133	2978		84	128	3578	
1MB1511-2DA	90	157	2975		101	151	3575	
1MB1511-3AA	110	187	2982		123	182	3582	
1MB1511-3AA	132	220	2982		148	215	3582	
1MB1511-3AA	160	265	2982		180	255	3580	
1MB1511-3AA	200	330	2982		224	320	3580	

4-pole	(1500 min^{-1}) IE2				(1800 min^{-1})			
1MB1511-2BB	37	65	1470	120°C	42,5	65	1770	120°C
1MB1511-2BB	45	80	1475		52	80	1775	
1MB1511-2CB	55	100	1480		63	99	1780	
1MB1511-2DB	75	132	1485		86	130	1785	
1MB1511-2DB	90	159	1486		104	158	1785	
1MB1511-3AB	110	195	1490		127	195	1788	
1MB1511-3AB	132	230	1490		152	230	1788	
1MB1511-3AB	160	280	1490		184	275	1788	
1MB1511-3AB	200	350	1490		230	350	1790	

Date of issue: 20.12.2013

Physical Technical Testing Institute,
Ostrava-Radvanice

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Rated parameters of basic versions of electric motors **Ex tb IIIC Tx°C Db,** continue:

Type	400 V 50Hz				460 V 60Hz			
	Output [kW]	Current [A]	Speed [min^{-1}]	Tx	Output [kW]	Current [A]	Speed [min^{-1}]	Tx
6-pole	(1000 min^{-1}) IE2				(1200 min^{-1})			
1MB1511-2BC	30	57	980		36	59	1175	
1MB1511-2CC	37	70	982		44,5	73	1180	
1MB1511-2DC	45	83	985		54	87	1185	
1MB1511-2DC	55	99	985		66	104	1185	
1MB1511-3AC	75	138	988	120°C	90	143	1186	120°C
1MB1511-3AC	90	165	988		108	171	1186	
1MB1511-3AC	110	196	988		132	200	1186	
1MB1511-3AC	132	235	988		158	240	1188	
1MB1511-3AC	160	285	988		192	290	1188	

8-pole	(750 min^{-1})				(900 min^{-1})			
1MB1511-2BD	18,5	38,5	730		22	38,5	880	
1MB1511-2BD	22	44	730		26,5	45	880	
1MB1511-2CD	30	59	732		36	60	880	
1MB1511-2DD	37	75	736		44,5	76	885	
1MB1511-2DD	45	89	738	120°C	54	91	885	120°C
1MB1511-3AD	55	107	740		66	110	890	
1MB1511-3AD	75	143	738		90	147	888	
1MB1511-3AD	90	167	740		108	174	890	
1MB1511-3AD	110	205	740		132	215	888	
1MB1511-3AD	132	250	740	130°C	158	255	888	130°C

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2-pole	($3000\ min^{-1}$) IE3				($3600\ min^{-1}$)			
1MB1513-2BA	45	78	2960	120°C	51	77	3560	120°C
1MB1513-2CA	55	95	2975		62	92	3575	
1MB1513-2DA	75	128	2975		84	125	3575	
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1MB1513-3AA	160	265	2982		180	255	3582	
1MB1513-3AA	200	330	2982		224	320	3582	

4-pole	($1500\ min^{-1}$) IE3				($1800\ min^{-1}$)			
1MB1513-2BB	37	66	1478	120°C	42,5	66	1778	120°C
1MB1513-2BB	45	80	1478		52	81	1778	
1MB1513-2CB	55	96	1482		63	97	1782	
1MB1513-2DB	75	133	1485		86	131	1785	
1MB1513-2DB	90	157	1485		104	158	1785	
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1MB1513-2BC	30	56	982		36	58	1180	
1MB1513-2CC	37	67	985		44,5	69	1182	
1MB1513-2DC	45	82	988		54	84	1186	
1MB1513-2DC	55	99	988		66	104	1186	
1MB1513-3AC	75	136	990	120°C	90	142	1190	120°C
1MB1513-3AC	90	161	990		108	170	1189	
1MB1513-3AC	110	199	991		132	205	1190	
1MB1513-3AC	132	240	991		158	245	1190	
1MB1513-3AC	160	290	991		192	300	1190	

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