



EC-Type Examination Certificate

(1)

(2)

Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC

(3) EC-Type Examination Certificate Number:

FTZÚ 13 ATEX 0054

(4)

Equipment: **Three-phase asynchronous motors types
1MB1511-..., 1MB1513-..., 1MB1611-..., 1MB1613-...,
frame size: -1A..., -1B..., -1C..., -1D..., -1E..., -2A..., (100 to 200)**

(5)

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

(6)

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

(7)

This equipment or protective system and any of acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8)

The Physical Technical Testing Institute, notified body number 1026 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report N°

13/0054 dated 12.11.2013

(9)

Compliance with Essential Health and safety requirements has been assured by compliance with:

EN 60079-0:2012 EN 60079-31:2009

(10)

If the sign „X” is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11)

This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and testing of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

(12)

The marking of the equipment or protective system shall include following:

Ex II 2D Ex tb IIIC T120°C Db or Ex tb IIIC T130°C Db

This EC-Type Examination Certificate is valid till: 14.11.2018

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of certification body



Date of issue: 14.11.2013

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Annex: 1

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This certificate may only be reproduced in its entirety and without any change, schedule included.



Physical Technical Testing Institute

Ostrava-Radvanice

Schedule

(13)

(14) EC-Type Examination Certificate N° FTZÚ 13 ATEX 0054

(15) Description of Equipment:

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 external fans are made from steel plate or from aluminium. The axial fan with an aluminium hub and blades made from galvanised steel are used. The fan covers are made of steel plate.

The shaft is fastened in roller bearings. The squirrel cage rotor is made from die-cast aluminium, die-cast copper or die-cast aluminium with coppers bars.

The connection design of separate parts and used sealing materials ensure degree of protection provided by cover IP65 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 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 category II2D, according to Directive 94/9/ES 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.

Electrical parameters of basic versions of electric motors are given in annex to this certificate.

General technical parameters:

Ambient temperature: $-20^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$, or

$-40^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$ for electrical motors with alternative materials,

$-20^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$ with decreased output power of electrical motors,

$-40^{\circ}\text{C} \leq T_a \leq 60^{\circ}\text{C}$ 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 50Hz:

Voltage: from 200 V to 690 V, voltage tolerances: $\pm 10\%$

Outputs: from 0,75 kW to 37 kW

Duty type: S1

Number of poles: 2, 4, 6, 8

Motors supplied by voltage with frequency 60Hz:

Voltage: from 220 V to 690 V, voltage tolerances: $\pm 10\%$

Outputs: from 0,86 kW to 41,5 kW

Duty type: S1

Number of poles: 2, 4, 6, 8

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of certification body



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Physical Technical Testing Institute
Ostrava-Radvanice

(13)

Schedule

(14) **EC-Type Examination Certificate N° FTZÚ 13 ATEX 0054**

(16) Report No.: 13/0054

(17) Special conditions for safe use: No conditions.

(18) Essential Health and Safety Requirements: They are included in standards, which are mentioned in clause (9) of this certificate. The product was approved in accordance with above mentioned standards.

(19) List of documentation:

Technical description electric motors series: 1MB1511..., 1MB1513..., 1MB1611..., and 1MB1613..., FS 100 to 200 (tb)	18.10.2013
Winding data printout, under the list in annex of technical description No. 1.1 and 1.2	
Catalogue electric motor data 1MB15x1..., 1MB15x3...	30.10.2013
Drawings No.:	
59018100200001_AA	30.10.2013
59018200200001_AA	19.09.2013
59018100220000_AA	04.06.2013
59018000212000_AA	29.05.2013
59018132212000_AA	10.09.2013
59018160212000_AA	09.10.2013
59018160212001_AA	28.03.2013
59018180230000_AA	30.10.2013
59018180290000_AA	04.10.2013
59018200212000_AA	10.04.2013
59018200212001_AA	29.04.2013
59018225212002_AA	01.10.2013
59018225216000_AA	29.04.2013
2383.7000v1_G	11.12.2001
2383.7200v1	24.02.2006
16354010399000	10.10.2013
1_383_30500_01_000_G	03.12.2004
3_228_7_4_135_792_00_A	03.05.2002
3_228_7_4_235_182_00	09.02.2009
3_228_7_4_235_184_00	09.02.2009
3_228_7_4_235_205_00	14.07.2009
5_635_8000_20_001	20.10.2005
5_635_8000_20_002	20.10.2005
5_635_8000_40_000	20.10.2005
5_901_00000_00_004	14.10.2011
5_901_00000_00_005	14.10.2011
5_901_81002_90_000	03.10.2013
5_901_81002_90_001	03.10.2013
Description of the insulation system No.: 5_650_13310_00_077	28.06.2010
Instruction for use No. 56100000002002	05/2013
Table: overview of terminal boxes	30.10.2013
Paint system PTN 143.1	18.07.2012

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Physical Technical Testing Institute

Ostrava-Radvanice

Annex No.1 to

EC-Type Examination Certificate N° FTZÚ 13 ATEX 0054

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: -1A..., -1B..., -1C..., -1D..., -1E..., -2A..., (100 to 200)**

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)			
1MB1511-1AA4	3	6,1	2905	120°C	3,45	5,8	3505	120°C
1MB1511-1BA2	4	7,8	2950		4,55	7,5	3550	
1MB1511-1CA0	5,5	10,5	2950		6,3	10,2	3550	
1MB1511-1CA1	7,5	14,1	2950		8,6	13,7	3550	
1MB1511-1DA2	11	20,5	2955		12,6	19,9	3555	
1MB1511-1DA3	15	27	2955		17,3	27,0	3555	
1MB1511-1DA4	18,5	33,5	2955		21,3	33,0	3555	
1MB1511-1EA2	22	40	2940		24,5	39,0	3540	
1MB1511-2AA4	30	54	2960		33,5	53,0	3560	
1MB1511-2AA5	37	66	2960		41,5	64,0	3560	

4-pole	(1500 min ⁻¹) IE2				(1800 min ⁻¹)			
	Output [kW]	Current [A]	Speed [min ⁻¹]	Tx	Output [kW]	Current [A]	Speed [min ⁻¹]	Tx
1MB1511-1AB4	2,2	4,65	1455	120°C	2,55	4,45	1755	120°C
1MB1511-1AB5	3	6,2	1455		3,45	6,0	1755	
1MB1511-1BB2	4	8,2	1460		4,55	8,0	1760	
1MB1511-1CB0	5,5	11,3	1465		6,3	10,9	1765	
1MB1511-1CB2	7,5	14,7	1465		8,6	14,5	1765	
1MB1511-1DB2	11	21	1470		12,6	20,5	1770	
1MB1511-1DB4	15	28	1475		17,3	27,5	1775	
1MB1511-1EB2	18,5	35	1465		21,3	34,0	1765	
1MB1511-1EB4	22	41,5	1465		25,3	40,5	1765	
1MB1511-2AB5	30	56	1470		34,5	55,0	1770	

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of certification body



Date of issue: 04.11.2013

Number of pages of annex: 4

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Physical Technical Testing Institute

Ostrava-Radvanice

Annex No.1 to

EC-Type Examination Certificate N° FTZÚ 13 ATEX 0054

Equipment: **Three-phase asynchronous motors types**
1MB1511-..., 1MB1513-..., 1MB1611-..., 1MB1613-...,
frame size: -1A..., -1B..., -1C..., -1D..., -1E..., -2A..., (100 to 200)

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)			
1MB1511-1AC4	1,5	3,7	970	120°C	1,75	3,45	1170	120°C
1MB1511-1BC2	2,2	5,2	965		2,55	4,75	1165	
1MB1511-1CC0	3	7	970		3,45	6,6	1170	
1MB1511-1CC2	4	8,7	970		4,55	8,3	1170	
1MB1511-1CC3	5,5	12	970		6,3	11,3	1170	
1MB1511-1DC2	7,5	16,1	975		8,6	15,5	1175	
1MB1511-1DC4	11	22,5	975		12,6	21,5	1175	
1MB1511-1EC4	15	31	975		18,0	31,0	1170	
1MB1511-2AC4	18,5	36	978		22,0	36,5	1175	
1MB1511-2AC5	22	43	978		26,5	43,5	1175	

8-pole	(750 min ⁻¹)				(900 min ⁻¹)			
1MB1511-1AD4	0,75	2,75	725	120°C	0,86	2,65	875	120°C
1MB1511-1AD5	1,1	4	725	130°C	1,27	3,7	865	
1MB1511-1BD2	1,5	4,25	720	120°C	1,75	4,15	870	
1MB1511-1CD0	2,2	6,2	725		2,55	5,9	875	
1MB1511-1CD2	3	8,1	730		3,45	7,7	875	
1MB1511-1DD2	4	9,7	730		4,55	9,6	880	
1MB1511-1DD3	5,5	13,3	730		6,3	13,2	880	
1MB1511-1DD4	7,5	17,3	730		8,6	16,9	880	
1MB1511-1ED4	11	26	720		13,2	26,0	865	
1MB1511-2AD5	15	32	718		18,0	32,5	865	

Responsible person:

Jaroslav

Dipl. Ing. Lukáš Martinák
 Head of certification body



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Physical Technical Testing Institute

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Equipment: **Three-phase asynchronous motors types**
1MB1511-..., 1MB1513-..., 1MB1611-..., 1MB1613-...,
frame size: -1A..., -1B..., -1C..., -1D..., -1E..., -2A..., (100 to 200)

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
2-pole	(3000 min ⁻¹) IE3				(3600 min ⁻¹)			
1MB1513-1AA4	3,0	5,6	2920	120°C	3,45	5,5	3520	120°C
1MB1513-1BA2	4,0	7,4	2955		4,55	7,2	3555	
1MB1513-1CA0	5,5	9,9	2950		6,3	9,7	3545	
1MB1513-1CA1	7,5	13,1	2950		8,6	13,0	3550	
1MB1513-1DA2	11,0	20,0	2955		12,6	19,5	3555	
1MB1513-1DA3	15,0	27,0	2960		17,3	27,0	3560	
1MB1513-1DA4	18,5	32,0	2955		21,3	32,0	3550	
1MB1513-1EA2	22,0	38,5	2950		24,5	37,5	3550	
1MB1513-2AA4	30,0	53,0	2955		33,5	52,0	3555	
1MB1513-2AA5	37,0	65,0	2955		41,5	63,0	3555	

4-pole	(1500 min ⁻¹) IE3			(1800 min ⁻¹)				
1MB1513-1AB4	2,2	4,4	1465	120°C	2,55	4,25	1765	120°C
1MB1513-1AB5	3,0	5,9	1460		3,45	5,8	1755	
1MB1513-1BB2	4,0	7,9	1460		4,55	7,7	1760	
1MB1513-1CB0	5,5	10,8	1470		6,3	10,6	1770	
1MB1513-1CB2	7,5	14,3	1465		8,6	13,8	1765	
1MB1513-1DB2	11,0	20,5	1475		12,6	20,0	1770	
1MB1513-1DB4	15,0	28,5	1475		17,3	28,0	1775	
1MB1513-1EB2	18,5	35,0	1470		21,3	34,5	1770	
1MB1513-1EB4	22,0	41,0	1470		25,3	41,0	1770	
1MB1513-2AB5	30,0	55,0	1470		34,5	55,0	1770	

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of certification body



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frame size: -1A..., -1B..., -1C..., -1D..., -1E..., -2A..., (100 to 200)

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) IE3				(1200 min ⁻¹)			
1MB1513-1AC4	1,5	3,45	970	120°C	1,75	3,45	1170	120°C
1MB1513-1BC2	2,2	4,7	970		2,55	4,75	1170	
1MB1513-1CC0	3,0	6,5	970		3,45	6,1	1170	
1MB1513-1CC2	4,0	8,4	970		4,55	8,1	1170	
1MB1513-1CC3	5,5	11,6	970		6,3	11,1	1170	
1MB1513-1DC2	7,5	15,2	975		8,6	14,6	1175	
1MB1513-1DC4	11,0	22,0	975		12,6	21,5	1175	
1MB1513-1EC4	15,0	29,5	975		18,0	30,5	1170	
1MB1513-2AC4	18,5	37,0	978		22,0	37,5	1175	
1MB1513-2AC5	22,0	43,5	978		26,5	44,0	1175	

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