



Type Examination Certificate

- (1) **Type Examination Certificate**
(2) **Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) Type Examination Certificate Number:

FTZÚ 13 ATEX 0040

- (4) Equipment: **Three-phase asynchronous motors type
1MB1521-..., 1MB1523-..., 1MB1621-..., 1MB1623-...,
1MB1531-..., 1MB1533-..., 1MB1631-..., 1MB1633-...,
frame size: -2B..., -2C..., -2D..., -3A..., (225 to 315)**
- (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 is specified in the schedule to this certificate and the documents therein referred to.
- (8) The Physical Technical Testing Institute 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 Category 3 equipment, which is intended for use in potentially explosive atmospheres given in Annex II to the Council Directive 94/9/EC.
The examination and test results are recorded in confidential Report N°
13/0040 dated 04.11.2013
- (9) Compliance with Essential Health and safety requirements has been assured by compliance with:
EN 60079-0:2012 EN 60079-31:2009 EN 60079-15:2010
- (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 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:

	II 3D	Ex tc IIIB T120°C Dc or Ex tc IIIB T130°C Dc or
	II 3G	Ex nA IIC T3 Gc or Ex nA IIB T3 Gc, or
	II 3GD	Ex nA IIC T3 Gc Ex tc IIIB T120°C Dc or Ex tc IIIB T130°C Dc

This Type Examination Certificate is valid till: 05.11.2018

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of certification body



Date of issue: 05.11.2013

Page: 1/3
Annex: 1

This certificate is granted subject to the general conditions of the Physical Technical Testing Institute.
This certificate may only be reproduced in its entirety and without any change, schedule included.



Physical Technical Testing Institute
Ostrava-Radvanice

(13)

Schedule

(14) **Type Examination Certificate N° FTZÚ 13 ATEX 0040**

(15) Description of Equipment: The electric motors type 1MB1521-..., 1MB1523-..., 1MB1621-... and 1MB1623-... are designed for application in explosive dust atmosphere and have explosion protection by cover "tc".

The electric motors type 1MB1531-..., 1MB1533-..., 1MB1631-... a 1MB1633-... are designed for application in gas explosive atmosphere with "nA" type of protection. These motors are alternatively designed to match requirements of both types of protections "nA" and "tc".

Electric motors are low voltage asynchronous squirrel cage motors. They have surface cooling with external fan fastened on shaft of electric motor. Basic materials for mechanical parts of motor are cast iron (housing, terminal box, bearing end shields) and steel (shaft, fan cover). The shaft is fastened in roller bearings. The fans are made of plastic or steel plate or aluminium alloy.

The connection design of separate parts and used sealing materials ensure degree of protection provided by cover minimally IP 55 for type of protection "nA" and minimally IP 65 for type of protection by cover "tc". 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. For sealing of shaft of electric motor are alternatively used radial shaft sealing rings or shaft V-rings (FPM, FKM, HNBR, NBR).

Squirrel cage is made of aluminium by die casting. Insulation system matches thermal class F.

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.

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.

Motors supplied by voltage with frequency 50Hz:

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

Outputs: from 18,5 kW to 200 kW

Duty type: S1

Number of poles: 2, 4, 6, 8

Motors supplied by voltage with frequency 60Hz:

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

Outputs: from 22 kW to 230 kW

Duty type: S1

Number of poles: 2, 4, 6, 8

(16) Report No. : 13/0040

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of certification body



Date of issue: 05.11.2013

Page: 2/3

This certificate is granted subject to the general conditions of the Physical Technical Testing Institute.

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



**Physical Technical Testing Institute
Ostrava-Radvanice**

(13)

Schedule

(14) **Type Examination Certificate N° FTZÚ 13 ATEX 0040**

(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 1MB1531..., 1MB1533..., 1MB1631..., 1MB1633... a 1MB1521..., 1MB1523..., 1MB1621..., 1MB1623..., FS 225 do 315	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...,	26.09.2013
Catalogue electric motor data 1MB15x3...,	18.07.2013
Drawings No.:	
59018225200000_AA	05.04.2013
59018280200000_AA	10.07.2013
59018225212000_AA	07.03.2013
59018280212000_AA	20.05.2013
59018315212000_AA	07.05.2013
59018225216000_AA	29.04.2013
59018280216000_AA	07.06.2013
59018315216000_AA	03.06.2013
59018315216001_AA	02.09.2013
59018000212000_AA	29.05.2013
59018225212001_-	12.07.2013
59018280212001_-	12.07.2013
59018315212001_-	12.07.2013
59018225212002_AA	01.10.2013
59018180290000_AA	04.10.2013
5_901_82252_90_000_-	03.10.2013
5_901_82252_90_001_-	03.10.2013
5_901_82252_90_002_-	03.10.2013
5_901_82252_90_003_-	03.10.2013
5_901_82252_90_004_-	03.10.2013
5_901_82252_90_005_-	03.10.2013
5_901_82252_90_006_-	03.10.2013
3_228_7_4_135_792_00_A dated 26.1.2009	03.05.2002
3_228_7_4_235_205_00_-	14.07.2009
3_228_7_4_235_182_00_-	09.02.2009
59018225230000_-	31.10.2013
Description of the insulation system No. 56501331000040	28.06.2010
Instruction for use No. 56100000002002	05/2013
Table No.:	
1 TB_overview	19.09.2013
2.1 - 2.6 Radial air gap	25.06.2013
Production process No.:	
N7-07.007	01.09.2011
WB0027	14.02.2013

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of certification body



Date of issue: 05.11.2013

Page: 3/3

This certificate is granted subject to the general conditions of the Physical Technical Testing Institute.
This certificate may only be reproduced in its entirety and without any change, schedule included.



Physical Technical Testing Institute

Ostrava-Radvanice

Annex No.1 to

Type Examination Certificate N° FTZÚ 13 ATEX 0040

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

Address: Vogelweiherstraße 1-15, 90441 Nürnberg, Germany

Equipment: Three-phase asynchronous motors type 1MB1521-..., 1MB1523-...,
1MB1621-..., 1MB1623-..., 1MB1531-..., 1MB1533-..., 1MB1631-..., 1MB1633-...,
frame size: -2B..., -2C..., -2D..., -3A..., (225 to 315)

Rated parameters of basic versions of electric motors Ex nA IIC T3 Gc, Ex tc IIIB Tx°C Dc:

Typ	400 V 50Hz				460 V 60Hz			
	Output [kW]	Current [A]	Speed [min ⁻¹]	"nA": T3 "tc": Tx	Output [kW]	Current [A]	Speed [min ⁻¹]	"nA": T3 "tc": 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	

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of certification body



Date of issue: 05.11.2013

Number of pages of annex: 4

Page: 1/4



Physical Technical Testing Institute

Ostrava-Radvanice

Annex No.1 to

Type Examination Certificate N° FTZÚ 13 ATEX 0040

Equipment: **Three-phase asynchronous motors type 1MB1521-..., 1MB1523-..., 1MB1621-..., 1MB1623-..., 1MB1531-..., 1MB1533-..., 1MB1631-..., 1MB1633-..., frame size: -2B..., -2C..., -2D..., -3A..., (225 to 315)**

Rated parameters of basic versions of electric motors Ex nA IIC T3 Gc, Ex tc IIIB Tx°C Dc, continue:

Type	400 V 50Hz				460 V 60Hz			
	Output [kW]	Current [A]	Speed [min ⁻¹]	"nA": T3 "tc": Tx	Output [kW]	Current [A]	Speed [min ⁻¹]	"nA": T3 "tc": Tx
6-pole	(1000 min ⁻¹) IE2				(1200 min ⁻¹)			
1MB1511-2BC	30	57	980	120°C	36	59	1175	120°C
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		90	143	1186	
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	120°C	22	38,5	880	120°C
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		54	91	885	
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	158	255	888	130°C	

Responsible person:

Lukáš Martinák

Dipl. Ing. Lukáš Martinák
Head of certification body



Date of issue: 05.11.2013

Page: 2/4



Physical Technical Testing Institute

Ostrava-Radvanice

Annex No.1 to

Type Examination Certificate N° FTZÚ 13 ATEX 0040

Equipment: Three-phase asynchronous motors type 1MB1521-..., 1MB1523-..., 1MB1621-..., 1MB1623-..., 1MB1531-..., 1MB1533-..., 1MB1631-..., 1MB1633-..., frame size: -2B..., -2C..., -2D..., -3A..., (225 to 315)

Rated parameters of basic versions of electric motors Ex nA IIC T3 Gc, Ex tc IIIB Tx°C Dc, continue:

Type	400 V 50Hz				460 V 60Hz			
	Output [kW]	Current [A]	Speed [min ⁻¹]	"nA": T3 "tc": Tx	Output [kW]	Current [A]	Speed [min ⁻¹]	"nA": T3 "tc": Tx
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	
1MB1513-2DA	90	152	2975		101	149	3575	
1MB1513-3AA	110	183	2982		123	179	3582	
1MB1513-3AA	132	220	2982		148	215	3582	
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	
1MB1513-3AB	110	191	1488		127	191	1788	
1MB1513-3AB	132	230	1490		152	225	1788	
1MB1513-3AB	160	275	1490		184	275	1788	
1MB1513-3AB	200	340	1488		230	345	1788	

Responsible person:

Lukáš Martinák

Dipl. Ing. Lukáš Martinák
Head of certification body



Date of issue: 05.11.2013

Page: 3/4



Physical Technical Testing Institute

Ostrava-Radvanice

Annex No.1 to

Type Examination Certificate N° FTZÚ 13 ATEX 0040

Equipment: **Three-phase asynchronous motors type 1MB1521-..., 1MB1523-..., 1MB1621-..., 1MB1623-..., 1MB1531-..., 1MB1533-..., 1MB1631-..., 1MB1633-..., frame size: -2B..., -2C..., -2D..., -3A..., (225 to 315)**

Rated parameters of basic versions of electric motors **Ex nA IIC T3 Gc, Ex tc IIIB Tx°C Dc**, continue:

Type	400 V 50Hz				460 V 60Hz			
	Output [kW]	Current [A]	Speed [min ⁻¹]	"nA": T3 "tc": Tx	Output [kW]	Current [A]	Speed [min ⁻¹]	"nA": T3 "tc": Tx
6-pole	(1000 min ⁻¹) IE3				(1200 min ⁻¹)			
1MB1513-2BC	30	56	982	120°C	36	58	1180	120°C
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		90	142	1190	
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	

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of certification body



Date of issue: 05.11.2013

Page: 4/4