



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 15.0034

Issue No: 2

Certificate history:

Status: **Current**

Issue No. 2 (2019-08-02)

Issue No. 1 (2016-03-31)

Issue No. 0 (2015-10-27)

Date of Issue: **2019-08-02**

Page 1 of 5

Applicant: **Siemens AG**
Vogelweierstraße 1-15
90441 Nürnberg
Germany

Equipment: **Three-phase asynchronous motors 1MB1531-..., 1MB1521-..., 1MB1533..., 1MB1523...**
frame size: -0C..., -0D..., -0E... (71 to 90)

Optional accessory:

Type of Protection: **Explosion Protection types "ec" and "tc"**

Marking:
Ex tc IIIB T120°C Dc or
Ex ec IIC T3 Gc or Ex ec IIB T3 Gc or
Ex ec IIC T3 Gc and Ex tc IIIB T120°C Dc

*Approved for issue on behalf of the IECEx
Certification Body:*

Dipl. Ing. Lukáš Martinák

Position:

Head of Certification Body

*Signature:
(for printed version)*

Jaroslav

Date:

2019-08-02



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](http://www.iecex.com).

Certificate issued by:

Fyzikálně technický zkusební ústav
(Physical -Technical Testing Institute)
Pikartská 7, 71607 Ostrava - Radvanice
Czech Republic





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Certificate No: IECEx FTZU 15.0034

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Page 2 of 5

Manufacturer: **Siemens AG**
Vogelweiherstraße 1-15
90441 Nürnberg
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 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 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2015 Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

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/ExTR15.0034/00](#)

[CZ/FTZU/ExTR15.0034/01](#)

[CZ/FTZU/ExTR15.0034/02](#)

Quality Assessment Report:

[DE/BVS/QAR09.0009/09](#)





IECEx Certificate of Conformity

Certificate No: IECEx FTZU 15.0034

Issue No: 2

Date of Issue: 2019-08-02

Page 3 of 5

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The electric motors types 1MB1521-..., 1MB1523-... are designed for application in explosive dust atmosphere and have explosion protection by enclosure "tc".

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

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 fan impeller is made of aluminium alloy. Alternatively external fan impeller is made of non metallic material for motors group II. The fan covers are made of steel plates. 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 minimally IP 55. 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 provides a DIN3760 shaft sealing ring. Material of these sealing rings is HNBR. 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. Entry of cable into the terminal box provide Ex equipment 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 network supply electric motors are given in annex to this certificate.

The electric motors type 1MB1531-..., 1MB1521-..., 1MB1533-..., 1MB1523-... can be alternatively operated with frequency converter type SINAMICS G120, S120, G180 or comparable converters described in the manufacturer documentation. The motor used in frequency converter supply windings is equipped with temperature sensors PTC. Nominal cut-off temperature of the PTC is +130°C.

SPECIFIC CONDITIONS OF USE: NO





IECEX Certificate of Conformity

Certificate No: IECEX FTZU 15.0034

Issue No: 2

Date of Issue: 2019-08-02

Page 4 of 5

EQUIPMENT (continued):

General technical parameters:

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

$-40^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$

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

$-40^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ with decreased output power of electrical motors.

Maximum ambient temperature range for the motors Group II with non metallic fan impeller is from -30°C to $+60^{\circ}\text{C}$.

Motors supplied by voltage with frequency 50 Hz (network supply):

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

Outputs: from 0,09 kW to 2,2 kW

Duty type: S1

Number of poles: 2, 4, 6, 8

Motors supplied by voltage with frequency 60 Hz (network supply):

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

Outputs: from 0.105 kW to 2.55 kW

Duty type: S1

Number of poles: 2, 4, 6, 8

General technical parameters of motors operated with frequency converter.

The motors of the above mentioned models series cover the following max. rated data:

Rated voltage: max. 690V $\pm 10\%$ (input of converter)

Outputs: max. 2.55 kW

Duty type S9

Frequency from 2 Hz to 100 Hz

Motors for converter supply will be equipped with second name plate with converter and load dates.





IECEx Certificate of Conformity

Certificate No: IECEx FTZU 15.0034

Issue No: 2

Date of Issue: 2019-08-02

Page 5 of 5

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 2:

Evaluation of the product according to the standard IEC 60079-7:2015.

Equipment Ex marking is changed from "nA" to "ec" according to IEC 60079-7:2015.

Documentation updating.

Group II motors can be alternatively equipped with non-metallic fan impeller. Maximum ambient temperature range for the motors with non metallic fan impeller is from -30°C to +60°C .

Anti condensation heater can be switch on immediately after motor is not running. Delay time 45 minutes is cancelled.

Manufacturer/Applicant name update.

Annex:

[Annex_to_Certificate_IECEx_FTZU_15_0034_Issue_No_2.pdf](#)





Electrical Apparatus: **Three-phase asynchronous motors types 1MB1531-..., 1MB1521-..., 1MB1533..., 1MB1523... frame size: -0C..., -0D..., -0E... (71 to 90)**

Rated parameters of basic versions of electric motors:

Type	400 V 50Hz			460 V 60Hz		
	Output [kW]	Current [A]	Speed [min ⁻¹]	Output [kW]	Current [A]	Speed [min ⁻¹]
2-pole	(3000 min ⁻¹) IE2			(3600 min ⁻¹)		
1MB15.1-0CA2	0,37	0,95	2770	0,43	0,93	3370
1MB15.1-0CA3	0,55	1,34	2780	0,63	1,34	3380
1MB15.1-0DA2	0,75	1,67	2805	0,86	1,7	3410
1MB15.1-0DA3	1,1	2,4	2835	1,27	2,3	3430
1MB15.1-0EA0	1,5	3,15	2885	1,75	3,1	3480
1MB15.1-0EA4	2,2	4,5	2890	2,55	4,35	3485

Type	400 V 50Hz			460 V 60Hz		
	Output [kW]	Current [A]	Speed [min ⁻¹]	Output [kW]	Current [A]	Speed [min ⁻¹]
4-pole	(1500 min ⁻¹) IE2			(1800 min ⁻¹)		
1MB15.1-0CB2	0,25	0,76	1395	0,29	0,75	1695
1MB15.1-0CB3	0,37	1,02	1380	0,43	1,04	1680
1MB15.1-0DB2	0,55	1,39	1440	0,63	1,42	1735
1MB15.1-0DB3	0,75	1,79	1440	0,86	1,82	1740
1MB15.1-0EB0	1,1	2,5	1425	1,27	2,45	1725
1MB15.1-0EB4	1,5	3,3	1435	1,75	3,3	1730

Type	400 V 50Hz			460 V 60Hz		
	Output [kW]	Current [A]	Speed [min ⁻¹]	Output [kW]	Current [A]	Speed [min ⁻¹]
6-pole	(1000 min ⁻¹) IE2			(1200 min ⁻¹)		
1MB15.1-0CC2	0,18	0,68	875	0,21	0,72	1075
1MB15.1-0CC3	0,25	0,84	870	0,29	0,87	1070
1MB15.1-0DC2	0,37	1,14	925	0,43	1,22	1125
1MB15.1-0DC3	0,55	1,65	935	0,63	1,76	1135
1MB15.1-0EC0	0,75	2,05	935	0,86	2,1	1135
1MB15.1-0EC0	0,75	1,95	935	0,86	2,05	1135
1MB15.1-0EC4	1,1	2,9	935	1,27	3,05	1135

Type	400 V 50Hz			460 V 60Hz		
	Output [kW]	Current [A]	Speed [min ⁻¹]	Output [kW]	Current [A]	Speed [min ⁻¹]
8-pole	(750 min ⁻¹)			(900 min ⁻¹)		
1MB15.1-0CD2	0,09	0,5	630	0,11	0,53	790
1MB15.1-0CD3	0,12	0,65	640	0,14	0,69	795
1MB15.1-0DD2	0,18	0,93	690	0,21	0,97	840
1MB15.1-0DD3	0,25	1,3	705	0,29	1,27	855
1MB15.1-0ED0	0,37	1,34	675	0,43	1,33	830
1MB15.1-0ED4	0,55	1,74	665	0,63	1,77	820



Electrical Apparatus: **Three-phase asynchronous motors types 1MB1531-..., 1MB1521-..., 1MB1533..., 1MB1523... frame size: -0C..., -0D..., -0E... (71 to 90)**

Rated parameters of basic versions of electric motors:

Type	400 V 50Hz			460 V 60Hz		
	Output [kW]	Current [A]	Speed [min ⁻¹]	Output [kW]	Current [A]	Speed [min ⁻¹]
2-pole	(3000 min ⁻¹) IE3			(3600 min ⁻¹)		
1MB15.3-OCA2	0,37	0,95	2850	0,43	0,97	3445
1MB15.3-OCA3	0,55	1,34	2850	0,63	1,35	3450
1MB15.3-ODA2	0,75	1,56	2850	0,86	1,63	3450
1MB15.3-ODA3	1,1	2,25	2885	1,27	2,25	3480
1MB15.3-OEA0	1,5	3	2910	1,75	2,95	3510
1MB15.3-OEA4	2,2	4,2	2910	2,55	4,2	3510

Type	400 V 50Hz			460 V 60Hz		
	Output [kW]	Current [A]	Speed [min ⁻¹]	Output [kW]	Current [A]	Speed [min ⁻¹]
4-pole	(1500 min ⁻¹) IE3			(1800 min ⁻¹)		
1MB15.3-OCB2	0,25	0,68	1395	0,29	0,69	1695
1MB15.3-OCB3	0,37	0,99	1410	0,43	0,99	1710
1MB15.3-ODB2	0,55	1,26	1440	0,63	1,25	1740
1MB15.3-ODB3	0,75	1,75	1450	0,86	1,72	1750
1MB15.3-OEB0	1,1	2,4	1440	1,27	2,35	1740
1MB15.3-OEB4	1,5	3,15	1445	1,75	3,15	1740

Type	400 V 50Hz			460 V 60Hz		
	Output [kW]	Current [A]	Speed [min ⁻¹]	Output [kW]	Current [A]	Speed [min ⁻¹]
6-pole	(1000 min ⁻¹) IE3			(1200 min ⁻¹)		
1MB15.3-OCC2	0,18	0,59	885	0,21	0,57	1085
1MB15.3-OCC3	0,25	0,76	885	0,29	0,74	1085
1MB15.3-ODC2	0,37	1,1	940	0,43	1,09	1140
1MB15.3-ODC3	0,55	1,53	935	0,63	1,44	1135
1MB15.3-OEC0	0,75	1,96	945	0,86	1,87	1140
1MB15.3-OEC4	1,1	2,85	940	1,27	3,05	1140

