



(1) **EC-TYPE-EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment and Protective Systems Intended for Use in
Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 07 ATEX 1034 X



- (4) Equipment: Three-phase asynchronous motors,
types 1MJ6 07. - to 1MJ6 20. -
- (5) Manufacturer: Siemens Aktiengesellschaft
Automatisierungs- und Antriebstechnik Standardantriebe
- (6) Address: 91056 Erlangen, Germany
- (7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.
- (8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 the confidential report PTB Ex 07-17171.

- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2004 EN 60079-1:2004 EN 60079-7:2003
EN 61241-0:2006 EN 61241-1:2004
- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:

 **II 2 G Ex d IIC T1 – T4 bzw. Ex de IIC T1 – T4 bzw.**

 **II 2 D Ex tD A21 IP65 TXXX °C**

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. M. Thedens
Oberregierungsrat



Braunschweig, December 5, 2007

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EC-type-examination Certificates without signature and official stamp shall not be valid. The certificates may be circulated only without alteration. Extracts or alterations are subject to approval by the Physikalisch-Technische Bundesanstalt. In case of dispute, the German text shall prevail.

(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 07 ATEX 1034 X

(15) Description of equipment

The three-phase asynchronous motors of types 1MJ6 07.-. to 1MJ6 20.-. are designed to Flameproof Enclosure type of protection. They have a cast-iron housing which is closed at its drive and non-drive ends with end shields. The shaft rotates in rolling bearings. Together with the housing and the end shields it forms a flameproof joint. For cooling, the three-phase asynchronous motors have a cowled external fan mounted at their non-drive end.

For 'D' areas (areas with flammable dust), the motor with its terminal compartments is designed to Protection by Enclosure 'tD' type of protection. For 'D' areas, the shaft is fitted with sealing rings which ensure that the IP degree of protection is maintained.

A terminal box of Increased Safety or Flameproof Enclosure type of protection (types gk 065d, gk 265d, gk 465d) provides for electric connection. Other – separately certified – terminal compartments may also be used. Certified bushings provide for electric connection between terminal compartment and motor compartment.

The three-phase asynchronous motors are designed for mains operation and for operation with frequency converter.

To safeguard compliance with the temperature class, the three-phase asynchronous motors are provided with a motor protection switch and, where required, with three temperature sensors embedded in the winding, a temperature sensor in the bushing plate, and a suitable electronic tripping device.

The three-phase asynchronous motors can be equipped with an anti-condensation heater.

Depending on the type and design of the motor, the motor ratings are as follows:

Admissible ambient temperature range	-20 °C to 60 °C*
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Duty types according to EN 60034	S1 to S9
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	Mains operation	Frequency-converter operation
Rated voltage	200 to 690 V	200 to 690 V
Rated frequency	50 / 60 Hz	5 to 100 Hz *

Type 1M.6	07.	08.	09.	10.	11.	13.	16.	18.	20.
Rated power up to [kW]	0.7	1.45	2.8	3.8	5.1	9.5	23.5	27.1	45.7

* may be limited by the circumferential speed of the fan

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(16) Test report PTB Ex 07-17171

(17) Special conditions for safe use

For repair of the flameproof joints due regard must be given to the structural specifications provided by the manufacturer. Repair in compliance with the values in tables 1 and 2 of EN 60079-1 is not accepted.

Additional notes for safe operation

Measures for compliance with the temperature class

For S1 mains operation, a function-tested current-controlled safety device monitoring all three phase conductors will suffice as protection for the three-phase asynchronous motors. This safety device must be adjusted for the rated current and must stop the three-phase asynchronous motors at 1.2 times the rated current within 2 hours or less. At 1.05 times the rated current, the three-phase asynchronous motors must not be disconnected within a period of 2 hours.

For S2 to S9 mains operation, the three-phase asynchronous motors must be operated with no less than three temperature sensors (one sensor per phase) and a suitable electronic shut-off system, which must have been tested for its function by a notified body.

For all duty types with frequency converter, the three-phase asynchronous motors must be provided with a temperature sensor in the bushing plate, in addition to the afore-mentioned three temperature sensors and the electronic shut-off system.

Anti-condensation heater

The anti-condensation heater must not heat when the three-phase asynchronous motors are operating.

(18) Essential health and safety requirements

Met by compliance with the afore-mentioned Standards.

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