Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(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 08 ATEX 3060

(4)	Equipment:	Three-phase external-rotor motors type MK 085-...
(5)	Manufacturer:	Ziehl-Abegg AG
(6)	Address:	Heinz-Ziehl-Straße 74653 Künzelsau, 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 08-38197.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2006 **EN60079-7:2007**

(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 e II T1, T2, T3 or T4

Zertifizierungssektor Explosionsschutz
By order:

Dr.-Ing. F. Lienesch
Regierungsdirektor

Braunschweig, November 13, 2008

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 3060

(15) Description of equipment

The three-phase motors, which are designed as external-rotor motors, have Increased Safety "e" type of protection.

The stator flange with the stator bush is made from die cast aluminium.

The rotor is made from die cast aluminium with potted shaft or with steel bush which is to accommodate the shaft. The rotor can be provided with unsealed condensed-water drains.

The rotor shaft rotates in for-life-lubricated rolling bearings that are closed at both ends. The bearing cap is made from steel or plastics.

The motors have IP44 degree of protection of enclosure.

The winding coils may be equipped with PTC thermistor detectors in compliance with standard DIN 44082. PTC thermistor detectors may be used as the only motor protection if they are connected to a tripping unit function-tested in compliance with Directive 94/9/EC (marked II (2) G) and the data sheet for the electrical rating shows this option.

The supply lead, which is connected to the winding ends directly in the winding overhang, is brought out through cable glands that have been approved on the basis of Directive 94/9/EC.

The motors are only used to drive axial and radial fans with axial air intake. Cooling is achieved by heat exchange, using the convection current of the transported medium and the motor enclosure.

The ambient temperature range is 40 °C to –20 °C. This range may be increased up to 60 °C by special electrical or thermal design features, using suitable materials and components, or by the data sheet for the electrical rating.

The electrical motor data, and the data for equipment providing for safe operation, including specifications for compliance with the temperature class, are defined in a data sheet that forms part of the EC type-examination certificate.

(16) Test report PTB Ex 08-38197

(17) Special conditions for safe use

None

Conditions for manufacturing, installation and operation

If the non-closed lead ends are connected to the outer electric circuits within the potentially explosive area, a suitable terminal box has to be used for which a separate certificate has been issued and which carries an explosion protection mark of its own. The connecting lead must be installed to provide for permanent wiring.

In connection with condensed-water boreholes, which are not closed during operation, the external-rotor motors must be installed with fan blades and fan housing.

To ensure IP44 degree of protection of enclosure, the motors must be provided with fan blades and they must be installed in the fan housing.

The temperature of the conveyed medium must not reach values beyond the temperature range specified in this certificate and accepted as ambient and cooling-medium temperature.

(18) Essential health and safety requirements

met by compliance with the harmonised standards mentioned above

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DATA SHEET 01 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 3060

Manufacturer **Ziehl-Abegg AG, 74653 Künzelsau, Germany**

for the three-phase asynchronmotor type MK 085-4DK.07.Y (fan drive)

Ratings

This certificate is valid for the following designs providing the motors of this type differ only negligibly from the sample tested as regards the electrical and thermal stresses:

Power (input):			0.39			kW
Voltage:	100	200	230	400	500	V
Current:	2.55	1.27	1.10	0.63	0.51	A
Power factor:			0.90			
Frequency:			50			Hz
Speed: (motor)			990			min^{-1}
Duty Type:			S1			
I_A/I_N ratio:			2.0			
Thermal class:			F			

In addition to the above-mentioned voltages, intermediate values are also permissible. The associated currents are to be converted in the inverse ratio to the voltages. The mains voltage may vary by up to ± 5% and the mains frequency by up to ± 2% from the rated values, in keeping with range A according to IEC 60034-1.

Temperature monitoring

If embedded temperature sensors (PTC thermistors DIN 44082-M130) are used together with a control unit tested for its function in accordance with directive 94/9/EC, the requirements of EN 60079-7, subclause 4.7.4 are also met for motors in the locked-rotor condition up to **temperature class T3**. At rated voltage and starting from the cold state (20°C), the tripping time will be t_A = 190 s.

Owing to the matched protective device, the data of the heating time t_E can be dispensed with.

Operation at reduced voltage

From 25% of the rated voltage, the motors may also be operated as fan drive at reduced voltage using a three-phase a. c. controller.

From 15% of the rated voltage, the motors may also be operated as fan drive at reduced voltage using a transformer.

Report PTB Ex 03-33295

Zertifizierungsstelle Explosionsschutz
By order

Dr.-Ing. F. Lienesch
Regierungsdirektor

Braunschweig, November 13, 2008

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

DATA SHEET 02 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 3060

Manufacturer **Ziehl-Abegg AG, 74653 Künzelsau, Germany**

for the three-phase asynchronmotor type MK 085-4DK.07.Y (fan drive)

Ratings

This certificate is valid for the following designs providing the motors of this type differ only negligibly from the sample tested as regards the electrical and thermal stresses:

Power (input):			0.39			kW
Voltage:	100	230	400	500	690	V
Current:	3.7	1.61	0.92	0.74	0.54	A
Power factor:			0.90			
Frequency:			50			Hz
Speed: (motor)			1060			min^{-1}
Duty Type:			S1			
I_A/I_N ratio:			2.3			
Thermal class:			F			

In addition to the above-mentioned voltages, intermediate values are also permissible. The associated currents are to be converted in the inverse ratio to the voltages. The mains voltage may vary by up to ± 5% and the mains frequency by up to ± 2% from the rated values, in keeping with range A according to IEC 60034-1.

Temperature monitoring

If embedded temperature sensors (PTC thermistors DIN 44082-M130) are used together with a control unit tested for its function in accordance with directive 94/9/EC, the requirements of EN 60079-7, subclause 4.7.4 are also met for motors in the locked-rotor condition up to **temperature class T3**. At rated voltage and starting from the cold state (20°C), the tripping time will be t_A = 130 s.

Owing to the matched protective device, the data of the heating time t_E can be dispensed with.

Operation at reduced voltage

From 25% of the rated voltage, the motors may also be operated as fan drive at reduced voltage using a three-phase a. c. controller.

From 15% of the rated voltage, the motors may also be operated as fan drive at reduced voltage using a transformer.

Report PTB Ex 03-33295

Zertifizierungsstelle Explosionsschutz
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Zertifizierungsstelle, Zertifizierungssektor Explosionsschutz

Physikalisch-Technische Bundesanstalt, Postfach 33 45, 38023 Braunschweig

Ziehl-Abegg AG
Herr Michael Schäfer
Heinz-Ziehl-Straße
74653 Künzelsau

Ihr Zeichen:	M. Schäfer
Ihre Nachricht vom:	2012-10-16
Unser Zeichen:	3.72-4317/12-Pt
Unsere Nachricht vom:	
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Datum:	5. November 2012

Normengenerationsänderung nach EN 60079-0:2009, EN 60079-7:2007
Change of the standard generation to EN 60079-0:2009
Gerät, Typ...Drehstrom- Außenläufermotoren MK 085-..., MK 106-... und MK 137-...
engl. Bezeichnung des Gerätes, type... three phases external rotor motors MK 085-..., MK 106-... and MK 137-...

Bescheinigungsnummer
Certification Numbre
PTB 08 ATEX 3060, PTB 08 ATEX 3061 und PTB 08 ATEX 3062

Sehr geehrte Damen und Herren,

Dear Sirs,

die Selbsterklärung zu dem o.g. Gerät auf Übereinstimmung mit den vorgenannten Normen hat die PTB zur Kenntnis genommen und den zugehörigen Prüfungsunterlagen beigefügt.

Your statement relating the above-named equipment concerning the conformity with the aforementioned standards was acknowledged by PTB and added to the related test documentation.

Es bestehen keine sicherheitstechnischen Bedenken, die o.g. Komponenten mit folgenden Kennzeichnungen zu versehen:

II 2 G Ex e IIC T3 Gb oder II 2 G Ex e IIC T4 Gb bzw.
II 2 G Ex eb IIC T3 oder II 2 G Ex eb IIC T4

There are no safety-related objections from PTB to mark the above mentioned components as follows:

II 2 G Ex e IIC T3 Gb or II 2 G Ex e IIC T4 Gb resp.
II 2 G Ex eb IIC T3 or II 2 G Ex eb IIC T4

Bitte nehmen Sie dieses Schreiben mit in Ihre Zulassungsunterlagen auf und reichen Sie diese Änderung in einer möglichen späteren Ergänzung mit ein.

Please add this letter to your approval documents and include this modification in a possible later supplement.

Mit freundlichen Grüßen */ Best regards*
Im Auftrag */ By order*

Dr.-Ing. F. Lienesch

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT

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