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 09 ATEX 1022 X

(4) Equipment: Three-phase motor, type K82. 400

(5) Manufacturer: VEM motors GmbH

(6) Address: Carl-Friedrich-Gauß-Str. 1, 38855 Wernigerode, 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 assessment and test report PTB Ex 09-18352.

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

EN 60079-0:2006 **EN 60079-1:2007** **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 T3 - T6 resp. Ex de IIC T3 - T6

II 2 D Ex tD A21 IP6X T200°C - T85 °C

Zertifizierungssektor Explosionsschutz
By order:

Dr.-Ing. U. Klausmeyer
Direktor und Professor

Braunschweig, April 6, 2009

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(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 1022 X

(15) Description of equipment

The equipment is a rotary electric machine, which is designed to Flameproof Enclosure "d" type of protection when used for "G" areas (areas with potentially explosive gas, vapour, mist, air mixtures). For "D" areas (areas with inflammable dust), the machine is designed to IP 6X degree of protection. The enclosure is equipped with cooling ribs and can optionally be a cast construction or be of welded steel construction. The shaft rotates in rolling bearings. Together with the inner bearing caps, it forms a flameproof shaft joint for the "G" area at the drive and the non-drive ends. For "D" areas, the shaft is provided with sealing rings, which ensure that the IP degree of protection is maintained.

Separately certified terminal compartments provide for power input. Certified bushings are used for electric connection between the terminal compartment and the motor compartment.

The maximum permissible ambient temperature range is -55 °C to 60 °C. This temperature range can be restricted by the terminal boxes or components selected or by the data sheet specifying the electrical design.

The electric motor data, including specifications safeguarding compliance with the temperature class, are defined in a data sheet attached to the EC Type-Examination Certificate.

(16) Assessment and Test Report PTB Ex 09-18352

(17) Special conditions for safe use

Repairs of the flameproof joints must be made in compliance with 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

Screws complying with strength class A2-70 as a minimum must be used for enclosure of the flameproof chamber.

Components attached or installed (terminal compartments, bushings, cable glands, connectors) have to be of a technical standard that complies with the specifications on the cover sheet. They must be suited for the operating conditions, and be covered by a separate examination certificate. The special conditions specified for the components must be complied with and may have to be included in the type test. This also applies to components already specified in the technical description.

The condensate drain unit must not be removed while the three-phase motor is in operation. After the three-phase motor has been stopped, a minimum waiting period of 30 minutes must be observed before the condensate drain can be removed. The motor must not be restarted until after the drain unit has been replaced.

Monitoring devices must satisfy the requirements in Directives 94/9/EC and EN 1127-1.

(18) Essential health and safety requirements

Met by compliance with the afore-mentioned Standards.

Zertifizierungssektor Explosionsschutz
By order:

Braunschweig, April 6, 2009

Dr.-Ing. U. Klausmeyer
Direktor und Professor

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DATA SHEET 01 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 09 ATEX 1022 X

Manufacturer: **VEM motors GmbH**
38855 Wernigerode, Germany
for three-phase motor, type K82. 400

Electrical data

The motors of type series K82. 400 manufactured by VEM motors GmbH, 38855 Wernigerode, are designed for ratings up to the following values:

Winding:	Low voltage	High voltage	
Voltage:	1100	11000	V
Current:	1000	110	A
Power:	600	450	kW
Speed:	4200	4200	rpm
Frequency (mains):	max. 60	max. 60	Hz
Frequency (converter):	1 - 100	---	Hz

For each motor design, compliance with the governing regulations has to be verified in the form of a type test. In this context reference has to be made to the code "Merkblatt für die elektrische Auslegung und Prüfung von Motoren in der Zündschutzart Druckfeste Kapselung im Rahmen der EG-Baumusterprüfbescheinigung".

The motors may be employed only for the duty type and under the ambient conditions for which they were type tested. This equally applies to operation with frequency converter.

Zertifizierungssektor Explosionsschutz
By order

Braunschweig, April 6, 2009

Dr.-Ing. U. Klausmeyer
Direktor und Professor

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 30

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