



(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 3038**

(4) Equipment: three-phase motor of the type series K1.R 160 ... Exell...

(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 report PTB Ex 08-38029.

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

**EN 60079-0: 2006**

**EN 60079-7: 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 - T4**

Zertifizierungsstelle Explosionsschutz

Braunschweig, September 04, 2008

By order:

Dr.-Ing. F. Lienesch  
Regierungsdirektor



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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.

## SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 3038**

(15) Description of equipment

The three-phase motors of types K1.R 160 ... Exell... are designed to Increased Safety "e" type of protection. The motor housings are made from grey cast iron, and they provide for attachment of terminal boxes and the squirrel-cage rotor is made from aluminium.

In the double squirrel-cage version, the outer and the inner cage are made from cast aluminium. The shaft rotates in rolling bearings. Another option with a shaft end at the non-drive end is possible.

Cooling is achieved by heat exchange, using an external fan made from aluminium, grey cast iron or plastics and by using the housing surface. It is also possible to use a separately driven fan, with a drive motor separately certified in compliance with Directive 94/9/EC.

The motors can, in addition, be equipped with resistance thermometers for Increased Safety "e" type of protection, with anti-condensation heaters, pulse generator and a brake, all of which must be separately certified in compliance with Directive 94/9/EC. PTC thermistor detectors are alternatively used as additional or as the only motor protection together with a certified tripping unit.

Electric connection is made with separately tested (with a separate Test Report) terminal boxes designed to Increased Safety "e" type of protection.

The ambient temperature range is 40 °C down to -20 °C. This range may be extended to 55 °C to -40 °C by special electrical or thermal design features, when using suitable terminal boxes, materials and components, or by the data sheet for the electrical rating.

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

For motors designed for ambient temperatures down to -40 °C, suitable materials and components are used, which have been tested separately or for which a separate certificate has been issued.

(16) Report PTB Ex 08-38029

(17) Special conditions for safe use

none

Notes for manufacturing and operation

Due care must be taken that the temperatures accepted for the components used will not be exceeded.

At an ambient temperature higher than +40 °C, due regard must in particular during the electro-thermal test be given to the maximum working temperatures of materials, components and sealing used.

If the types of protection of terminal box and electric machine are not identical, the terminal box must carry a note that makes reference to the type of protection used for the terminal box.

Components attached or installed (terminal compartments, bushings, cable entry fittings, 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.

If the three-phase motor is cooled by a separately driven fan, adequate measures must be taken to ensure that the motor can only be operated with the separately driven fan switched on.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

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Braunschweig, September 04, 2008

## 1st SUPPLEMENT

according to Directive 94/9/EC Annex III.6

### to EC-TYPE-EXAMINATION CERTIFICATE PTB 08 ATEX 3038

(Translation)

Equipment: Three-phase motors of types K1.R 160...Exell... resp. IE.-K1.R 160...Exe II...

Marking:  II 2 G Ex e II T1 - T4

Manufacturer: VEM motors GmbH

Address: Carl-Friedrich-Gauß-Str. 1, 38855 Wernigerode, Germany

#### Description of supplements and modifications

The listed motors are optionally modified as follows:

The rotor cage is optionally made from die-cast copper.

The terminal box is alternatively mounted on the non-drive end. The type code is in this case extended to include item 14 - special "KN" marking to indicate a special design.

The type code item 1 is extended to include the energy efficiency class "IE." identification.

#### Applied standards

EN 60079-0:2006

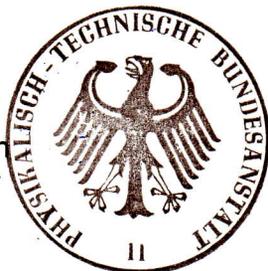
EN 60079-7:2007

Assessment and test report: PTB Ex 10-30056

Zertifizierungssektor Explosionsschutz  
By order:

Braunschweig, April 30, 2010

  
Dr.-Ing. F. Lienesch  
Regierungsdirektor



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