



(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 99 ATEX 1138



(4) Equipment: Three-phase motors of types 4KTC 71 and 160

(5) Manufacturer: BARTEC-VARNOST d.o.o.

(6) Address: SLO-1410 Zagorje ob Savi, Cesta 9, Avgusta 59

(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 99-19003.

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

EN 50014:1997

EN 50018:1994

EN 50019:1994

(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 and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:

II 2 G EEx d IIC T4 resp. EEx de IIC T4

Zertifizierungsstelle Explosionsschutz

Braunschweig, March 20, 2000

By order:

Dr.-Ing. U. Klausmeyer
Regierungsdirektor



SCHEDULE

(13)

(14) **EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 1138**

(15) Description of equipment

The three-phase motors of the types 4KTC 71 and 4KTC 160 in Flameproof Enclosure type of protection consist of a cast iron casing which is closed with end shields at the drive and non-drive ends in the case of types 4KTC 160 and only at the non-drive end in the case of types 4KTC 71. The shaft, which is, equipped with ball bearings forms flameproof joints both with the casing and with the end shields. To cool the three-phase motors, the non-drive end accommodates an external fan, which is protected by a hood.

The electrical connection is via separate terminal boxes of the Flameproof Enclosure or Increased Safety type of protection. A cable bushing ensures the electrical connection between terminal box and motor compartment.

The three-phase motors can be operated on the mains and on the frequency converter. To comply with the temperature class, the three-phase motors will be provided with a motor protecting switch and, if necessary, with three temperature sensors arranged in the winding and a suitable electronic cut-off device.

The three-phase motors can be equipped with heating elements.

According to type and design, the three-phase motors may be designed within the following technical data:

Terminal box of type of protection	Permissible ambient temperature range
Flameproof enclosure	- 50 °C* to 60 °C
Increased safety	- 20 °C to 60 °C

Operation modes according EN 60034:1998	S1 to S10
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	Mains operation	Frequency converter operation
Rated voltages	380 V to 690 V AC ±10 %	to 565 V AC
Rated frequencies	50 Hz / 60 Hz	from 5 to 87 Hz

Type 4KTC	71	160
Rated power up to	0.55 kW	18.5 kW

*See also the hints for installation and operation

(16) Test report PTB Ex 99-19003

(17) Special conditions for safe use

None,

the following hints have to be complied with for installation and operation.

Installation

The terminal boxes of the Flameproof Enclosure type of protection must be provided with points of entry, adapters and closing elements which have been certified at least in compliance with the standards EN 50014:1992 and EN 50018:1994.

The terminal boxes of the Increased Safety type of protection must be provided with points of entry, adapters and closing elements which have been certified at least in compliance with the standard EN 50014:1992.

The terminal boxes of the Increased Safety type of protection must not be used at an ambient temperature $< -20\text{ }^{\circ}\text{C}$.

Operation

In S1 mains operation, it is sufficient for the protection of the three-phase motors to provide a function-tested current-depending protective device monitoring the three outer conductors. This device which is adjusted to the rated current must switch off the three-phase motors at 1,2 times the rated current within two hours or less. At 1,05 times the rated current, the three-phase motors must not be switched off within two hours.

In S2 to S10 mains operation and in all duties with frequency converter, the three-phase motors must be operated at least with three temperature sensors (one per phase) and a suitable electronic cut-off device, which have together been tested by a notified body for their function.

If three-phase motors are to be used at an ambient temperature $< -20\text{ }^{\circ}\text{C}$, they must be equipped with heating elements.

The heating elements may heat only when the three-phase motors are not in operation.

(18) Essential health and safety requirements

Met by the standards mentioned above

Zertifizierungsstelle Explosionsschutz

By order:


Dr.-Ing. U. Klausmeyer
Regierungsdirektor



Braunschweig, March 20, 2000

1st SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 1138

(Translation)

Equipment: Three-phase motors, types 4KTC 71 and 160

Marking:  II 2 G EEx d IIC T4 or EEx de IIC T4

Manufacturer: BARTEC - VARNOST d.o.o.

Address: Cesta 9 Augusta 59
1410 Zagorje ob Savi, Slovenia

Description of supplements and modifications


The motors may be optionally fitted with a direct cable entry. In that case, the terminal box may be dispensed with. All direct cable entries shall be glued to the enclosure.

Test report: PTB Ex 01-11258

Zertifizierungsstelle Explosionsschutz

Braunschweig, 24 October 2001

By order:


Dr.-Ing. U. Klausmeyer
Regierungsdirektor



2nd SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 1138

(Translation)

Equipment: Three-phase motors, types 4 KTC 80 to 132
types 4 KTC 80 to 132

Marking:  II 2 G EEx d IIC T4...T6 or EEx de IIC T4...T6

Manufacturer: BARTEC - VARNOST d.o.o.

Address: Cesta 9 Augusta 59
1410 Zagorje ob Savi, Slovenia

Description of supplements and modifications

The admissible voltage rating for mains operation is extended to 110 to 690 V AC $\pm 10\%$.

The motors may be optionally designed for temperature classes T5 and T6.

Under type names 4 KTB 71 and 4 KTB 160, the motors may also carry the gas group IIB marking.
The marking will in that case change to read:

 II 2 G EEx d IIB T4...T6 or EEx de IIB T4...T6

Test report: PTB Ex 03-12401

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, 19 May 2003


Dr. M. Thedens



3rd SUPPLEMENT
according to Directive 94/9/EC Annex III.6
to EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 1138
(Translation)

Equipment: Three-phase motors of types 4 KTC 71 and 160
4 KTB 71 and 160

Marking:  **II 2 G EEx d IIC T4 ... T6 or EEx de IIC T4 ... T6**

Manufacturer: BARTEC - VARNOST d.o.o.

Address: Cesta 9 Augusta 59
1410 Zagorje ob Savi, Slovenia

Description of supplements and modifications

Certification has been extended to cover group II D (dust explosion protection).

Maximum permissible ambient temperature range: -30 °C to 60 °C.

Type name and marking are changed as follows:

Motor type 4 KTCD /.

 **II 2 G EEx d IIC T4 ... T6 or EEx de IIC T4...T6**

 **II 2 D IP 6X T 135 °C ... T 85 °C**

Motor type 4 KTBD /.

 **II 2 G EEx d IIB T4 ... T6 or EEx de IIB T4...T6**

 **II 2 D IP 6X T 135 °C ... T 85 °C**

Applied standards

EN 50281-1-1:1998

Test report: PTB Ex 05-15326

Zertifizierungsstelle Explosionsschutz

Braunschweig, 1. November 2005

By order:



Dr. M. Thedens
Regierungsrat

