

# 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 99 ATEX 3402**

(4) Equipment: three-phase motor of the type series eD.. 71

(5) Manufacturer: SEW-EURODRIVE

(6) Address: Ernst-Blickle-Straße 42, D- 76646 Bruchsal

(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 99-30134.

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

**EN 50014:1997**

**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 e II T1, T2, T3 or T4 bzw. EEX ed IIB T1, T2, T3 or T4**

Zertifizierungsstelle Explosionsschutz  
By order:

Braunschweig, 15. März 2000

Dr.-Ing. U. Engel  
Regierungsdirektor

sheet 1/2

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.

# Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(13)

## SCHEDULE

(14)

### EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 3402

(15) Description of equipment

Three-phase motors of the type series eD 71 of the type of protection Increased Safety "e", whose mechanical construction has been specified in the test report according to clause 16 below and whose electrical design has been specified in an associated data sheet, each according to the manufacturer's application.

(16) Report PTB Ex 99-30134

(17) Special conditions for safe use

not applicable

(18) Essential health and safety requirements

met by standards

Zertifizierungsstelle Explosionsschutz  
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## 2. SUPPLEMENT

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

to EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 3402

(Translation)

Equipment: Three-phase motors, type series eD.. 71...

Marking:  II 2 G Ex e II... or  
 II 2 G Ex ed IIC... or  
 II 2 D Ex tD A21 IP65 T...°C

Manufacturer: SEW-EURODRIVE GmbH & Co KG

Address: Ernst-Blickle-Straße 42,  
76646 Bruchsal, Germany

### Description of supplements and modifications

Motors of type series eD..71... comply with the requirements specified in the EN 60079 and EN 61241 series of standards as well as with the marking requirements.

Motors with enclosures made from aluminium or grey cast iron have a squirrel-cage rotor made from die-cast aluminium. The shafts rotate in rolling bearings. They are provided with a separately tested sealing ring which is to safeguard compliance with IP degree of protection. For machines of category II 2 G, the degree of protection of the enclosure is IP54; and for machines of category II 2 D it is IP65.

The required cooling effect is achieved by heat exchange, using the surface of the stator housing, which is provided with cooling ribs, and by using an external fan made from aluminium or plastic.

The motors may, in addition, be equipped with a brake designed to Flameproof Enclosure "d" type of protection, which is separately certified in compliance with Directive 94/9/EC. The motors may alternatively be provided with backstop and, if required, with PTC thermistor detectors embedded in the motor winding.

Electric connection is by means of terminal compartments, which have the same type of protection as the motor, and whose IP degree of protection is at least the same as that of the motor housing. Their enclosures are made from grey cast iron, and they are equipped with separately certified cable entries, sealing plugs, terminal boards, and separately tested seals.

## 2. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 3402

The electrical data, including temperature class; for category-II 2 D machines: the maximum surface temperature, are defined for the different electrical designs in a data sheet attached to the EC Type-Examination Certificate.

For all data sheets of this EC Type Examination Certificate which show a voltage rating range, the maximum rated voltage must, according to EN 60079-7: 2003, table 1, be  $690\text{ V} \pm 10\%$  (area B). This comprises a rated voltage of  $725\text{ V} \pm 5\%$  (area A).

### Notes for manufacturing and operation

Due care must be taken to make sure that the admissible temperatures of the components used will not be exceeded.

The maximum working temperature of materials, components and seals must be considered in particular in the electro-thermal tests at ambient temperatures greater than  $+40\text{ }^{\circ}\text{C}$ .

Terminal compartments must be mounted in the way defined in the attached technical documents, the required degree of protection IP54 must be safeguarded as a minimum for machines of category II 2 G, and IP65 as a minimum for machines of category II 2 D, and the requirements set forth in EN 60079 and EN 61241 must be complied with.

### Applied standards

EN 60079-0:2004

EN 60079-1:2004

EN 60079-7:2003

prEN 61241-0:2002

EN 61241-1:2004

Test report: PTB Ex 07-36183

Zertifizierungsstelle Explosionsschutz

By order:

Braunschweig, January 24, 2007

  
Dr.-Ing. F. Lienesch  
Oberregierungsrat



# Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

## DATA SHEET 03 TO EC-TYPE-EXAMINATION CERTIFICATE PTB 99 ATEX 3402

Manufacturer: SEW-EURODRIVE GmbH & Co, D-76646 Bruchsal

for the three-phase asynchronmotor type series eD. T 71 D 4

### 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 on the output shaft:			0,37				kW
Voltage:	110	230	400	500	690		V
Current:	4,50	1,98	1,14	0,91	0,66		A
Power factor:			0,70				
Frequency:			50				Hz
Speed: (motor)			1365				min <sup>-1</sup>
Duty Type:			S1				
I <sub>A</sub> /I <sub>N</sub> ratio:			3,7				
Thermal class:			B or 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  $\pm 5\%$  and the mains frequency by up to  $\pm 2\%$  from the rated values, in keeping with range A according to IEC 34-1.

### Temperature monitoring

For the selection of a current dependent time-lag protective device, the times  $t_E$  were determined as follows:

Temperature class:	T1	T2	T3	
Time $t_E$ :	29	29	29	s

### Report PTB Ex 99-30120

Zertifizierungsstelle Explosionsschutz  
By order

Braunschweig, 15.März 2000

Dr.-Ing. U. Engel  
Regierungsdirektor