(1) # EC-TYPE-EXAMINATION CERTIFICATE

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – **Directive 94/9/EC**

(3) EC-type-examination certificate number:

SIQ 16 ATEX 142 X

(4) Equipment: Electric motor, type D*Ex** */*** **

(5) Manufacturer: Herforder Elektromotoren-Werke GmbH & Co. KG

(6) Address: Goebenstraße 106, 32051 Herford, Germany

(7) This equipment and any acceptable variations thereto are specified in the schedule to this certificate and in the documents therein referred to.

(8) SIQ Ljubljana, Notified body number 1304 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 test report TEx142/16.

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

EN 60079-0 : 2012 **EN 60079-1 : 2014** **EN 60079-7 : 2007** **EN 60079-31 : 2014**

(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 with 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 one of the following:

Ⓔx II 2 G Ex db IIC T4–T6 Gb or Ⓔx II 2 G Ex db e IIC T4–T6 Gb

Ⓔx II 2 G Ex db IIB T4–T6 Gb or Ⓔx II 2 G Ex db e IIB T4–T6 Gb

Ⓔx II 2 D Ex tb IIIB T135°C–T85°C Db

Ⓔx II 2 D Ex tb IIIC T135°C–T85°C Db

Certification body

Ljubljana, 19 April 2016

Igor Likar

SIQ Ljubljana, Tržaška cesta 2, SI-1000 Ljubljana

(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE
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(15) Description of the equipment

Electric motor, type D*Ex** */*** **, is designed in the type of protection flameproof enclosure Ex d with terminal box designed in the type of protection flameproof enclosure Ex d or increased safety Ex e. Terminal box is the same for both cases. The enclosure, the bearing shield, the terminal box and the cover of the terminal box are made from cast-iron. The terminal box is casted together with the enclosure. Between motor's enclosure and terminal box a hole for line bushing type BV, Bartec Varnost, d.o.o., with component certificate No. SIQ 13 ATEX 071 U, is provided. For the variant with terminal box in the type of protection flameproof enclosure Ex d line bushing is not installed. For the variant with terminal box in the type of protection increased safety Ex e line bushing is installed. The squirrel-cage rotor is made from aluminium. The shaft is made from steel C45 or C60. The shaft seals are made from NBR. Stator windings are equipped with three temperature sensors (PTC) connected in series. Optionally stator windings can be equipped with three bimetal switches (PTO).

Electric motor, type DDEx** */*** **, is designed in the type of protection equipment dust ignition protection by enclosure Ex t. Design is the same as for electric motor in the type of protection flameproof enclosure Ex d with terminal box designed in the type of protection flameproof enclosure Ex d with modified shaft and shaft seals made from 75 FKM 585. Paint used for these types of motors has surface resistance less than 1 GΩ.

Electric motors for use at ambient temperatures lower than -20°C can be equipped with space heater.

Technical data

Type key:

D*Ex** */*** **

- Protection: K (PTC thermistor), T (PTO bimetal switch), K+T (both)
- Number of poles: 2, 4, 6, 8 or 4-2
- Motor execution (length): K (45 mm) or L (60 mm)
- Size: 63 (63 mm)
- Gas or dust group: B (IIB), C (IIC) or D (IIC/IIIC)

Rated voltage: up to 690 V a.c.

Frequency: 50 Hz/60 Hz

Rated speed (S1-S9): from 750 rev/min to 3600 rev/min

Frequency for inverter supply: from 5 Hz to 100 Hz

Rated speed for inverter supply: from 48 rev/min to 6000 rev/min

Rated power for different motor executions (lengths) and number of poles:

Type D*Ex** x/y **	Rated power (50 Hz) [W]					Rated power (60 Hz) [W]
	x2	x4	x6	x8	x4-2	
Ky	180	120	90	60	90	Up to 220
Ly	250	180	120	90	120	Up to 300

Maximum ambient temperature range: - from -30°C to +60°C (for gas version)
- from -30°C to +85°C (for dust version)

Ingress protection: - terminal box (all versions): IP66
- motor enclosure (dust version): IP6X

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(16) Test report

TEx142/16 dated 19. 4. 2016.

(17) Special conditions for safe use

- Repair on flameproof joints may only be performed in accordance with the manufacturer's design specifications. Repair on the basis of the values in Tables 1 and 2 of EN 60079-1 : 2014 is not permitted.
- The electrical data, the temperature class, the surface temperature and the ambient temperature range from (15) is for the respective version determined by the routine test carried out by the manufacturer.
- Temperature sensors (PTC) and/or bimetal switches (PTO) shall be connected to disconnecting device according to manufacturer's instructions.
- Shaft seal of electric motor for explosive dust atmospheres shall be protected from light.

(18) Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements has been assured by compliance with the requirements of the standards listed under item (9).