\(1) # EU-Type-Examination Certificate

(2) Equipment and protective systems intended for use in potentially explosive atmospheres, **Directive 2014/34/EU**

(3) **Certificate Number** **TÜV CY 19 ATEX 0206265 X**

(4) for the equipment: Power Slip Ring
Type: SREX506* series

(5) of the manufacturer: **SPM Special Machine Srl**

(6) Address: Via Padana Superiore 38 Inzago (MI)- 20065 – ITALY

Order number: 0206265

Date of issue: 2019-12-23

(7) The design of this equipment or protective system and any acceptable variation thereto are specified in the schedule to this EU-Type-Examination Certificate and the documents therein referred to.

(8) TÜV CYPRUS Ltd, notified body No. 2261 in accordance with Article 17 of the Council Directive of 2014/34/EU of February 26, 2014, certifies that this equipment or protective system 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 No. 19 0206265.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012/A11:2013 **EN 60079-1:2014**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-Type-Examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment which are not covered by this certificate.

(12) The marking of the equipment or protective system must include the following:

II 2G Ex db IIB T5…T4 Gb

TÜV CYPRUS Ltd (TÜV NORD Group),

The head of the notified body,

D. Demosthenous

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(13) **S C H E D U L E**

(14) **EU-Type-Examination Certificate No. TÜV CY 18 ATEX 0206117 X**

(15) Description of equipment

The power slip ring SREX506 series are used for the main and auxiliary electrical transmission between fixed and rotating parts. The main enclosure designed in compliance with the Ex db type of protection is intended to contain the conductive rings and brushes insulated for each main or auxiliary channel.

The slip ring enclosures is made completely in steel material, by means of two opposite covers, flanged rotor support in the bottom side and threaded holes for entry cables devices on the side.
All enclosure parts are coupled without gasket interposition forming the explosion flame paths.
As option, an external junction box with type of protection "Ex eb" may be assembled on the main slip ring enclosure for the auxiliary connection facilities and an internal anticondensation heater with max. power 60W.

The accessories used for cable entry and for the unused holes with separated ATEX certificate, are mounted according to related manufacturer's instruction and selected according to the applicable type of protection, ensuring the minimum degree of protection.
Each enclosure is provided with internal and external terminal or earthing screw or bolt.

The maximum dissipated power of the slip ring system has been defined in function of the max. ambient temperature, temperature class and relevant service temperature, according to manufacturer's documentation.

Permissible ambient temperature range:
-40°C to +60°C.

Identification code:
The power slip ring identification code is composed as follow:

SREX	506	0001	
			Power slip ring ATEX
			Enclosure dimension: **506 =** 500x500x600 mm
			Technical specification number

Ratings:

Rated Voltage	110 ÷ 6000 Vac
Max. Rated Current	638A
Max. Dissipated Power	750W
Max. power channels	4
Frequency:	50-60Hz

Relation between Maximum Power dissipation Pd, ambient temperature, Temperature Class and T.Cables:

Pd [W]	T.amb. Max [°C]	Temperature Class
500	60	T5
700	60	T4
750	55	T4

Pd [W]	T.amb. Max [°C]	T. Cables
200	60	(*)
250	60	≥ 85°C
350	60	≥ 95°C
450	60	≥ 105°C
550	60	≥ 115°C
650	60	≥ 125°C
750	55	≥ 135°C

(*) Maximum temperature of air inside slip ring enclosure is less than 80°C, so special cable is not required. The temperature of cable is given in the nameplate.

Warning labels:
The following warning marks are present on the slip ring enclosure:
"WARNING – DO NOT OPEN WHEN ENERGIZED";
"WARNING – USE ONLY FASTENING WITH PROPERTY CLASS 8.8 OR HIGHER ";
"WARNING – RESTORE THE GREASE ON THE JOINTS AT EVERY OPENING".

Routine test:
Manufacturer shall carry out the routine overpressure test with the static method (clause 15.2.3.2 of EN 60079-1:2014) on each enclosure at 15bar, maintained for at least 10 s.

(16) Test documents are listed in the test report No. 19 0206265.

(17) Special conditions for safe use

1. The flame-paths are specified in the manufacturer's documentation. For information regarding the dimension of the flameproof joints the manufacturer shall be contacted.
2. The screw used for the flanges fastening of the enclosures must have a property Class 8.8 or higher according to standard ISO 898-1.
3. Connect the enclosures to the ground through the available external connection facilities using a proper cross section of protective earthing (PE) conductor, according to the table 10 of EN 60079-0 and manufacturer instruction.
4. The accessories used for cable entry and for the unused holes shall be separately certified according to EN 60079-0, EN 60079-1 standards as appropriate, installed according to EN 60079-14 and shall guarantee the minimum degree of protection as indicated on nameplate. If cylindrical threads are used, the coupling between the cable gland and the terminal box shall be provided with block to prevent loosening.

(18) Essential Health and Safety Requirements

This certificate covers only the Essential Health and Safety Requirements related to the Directive 2014/34/EU.