

IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg



[1] **EU-TYPE EXAMINATION CERTIFICATE - Translation**

[2] Equipment or protective systems intended for use in potentially explosive atmospheres, Directive 2014/34/EU

[3] EU-type examination certificate number **IBExU16ATEX1220 X** | Issue 0

[4] Product: **DC stroke solenoid**
Type: 41 03E**K**

[5] Manufacturer: Kendrion GmbH

[6] Address: August-Fischbach-Straße 1
78166 Donaueschingen
GERMANY

[7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] IBExU Institut für Sicherheitstechnik GmbH, Notified Body number 0637 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the essential health and safety requirements relating to the design and construction of products 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 IB-16-3-122.

[9] Compliance with the essential health and safety requirements has been assured by compliance with: EN 60079-0:2012+A11:2013 EN 60079-7:2015 except in respect of those requirements listed at item [18] of the schedule.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the specific conditions of use specified in the schedule to this certificate.

[11] This EU-type examination certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the product shall include the following:

 **II 2G Ex eb IIC T4 Gb**

IBExU Institut für Sicherheitstechnik GmbH
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09599 Freiberg, GERMANY

By order

Dipl.-Ing. (FH) A. Henker



- Seal -
(Notified Body number 0637)

Tel: + 49 (0) 37 31 / 38 05 0
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Certificates without signature and seal are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

Freiberg, 2017-07-03

[13] **Schedule**

[14] **Certificate number IBExU16ATEX1220 X | Issue 0**

[15] **Description of product**

The DC stroke solenoid of type 41 03E**K** is mainly used as a switching magnet intended for areas with potentially explosive atmospheres of zone 1. It consists of a magnet compartment made of steel containing the winding and the armature, and a terminal compartment made of aluminium. Both compartments are implemented in type of protection "e" (increased safety). The solenoid is available in different variants regarding size, rated voltage and power. In some variants, the interior of the solenoid can be filled with hydraulic oil in order to damp to movement of the armature.

Technical data:

- Nominal voltage: 24 V...205 V DC
- Rated current: 0.25 A...4.54 A
- Nominal power: 39.9 W...106.1 W
- Duty cycle: 100 %
- Ambient temperature: -20 °C...+35/+40 °C

These values are maximum values. Further details are specified in the operation manual as well as in the documents of the manufacturer, which are part of the test report. The corresponding operating parameters for the respective layout of the solenoid have to be taken from the name plate and the supplementary documentation.

Variants / type overview:

Solenoid type	Nominal voltage	Nominal power	Rated power ⁽¹⁾	Ambient temperature
41 03E10K00	24 V DC	49.7 W	max. 50.9 W	-20 °C...+40 °C
	110 V DC	47 W	max. 48.4 W	-20 °C...+40 °C
41 03E11K00	24 V DC	39.9 W	max. 41.1 W	-20 °C...+40 °C
41 03E11K03 ⁽²⁾	200 V DC	48 W	max. 50 W	-20 °C...+40 °C
41 03E13K00	24 V DC	56 W	max. 57.7 W	-20 °C...+40 °C
	110 V DC	59.9 W	max. 61.8 W	-20 °C...+40 °C
	180 V DC	62.9 W	max. 64.8 W	-20 °C...+40 °C
	205 V DC	61.9 W	max. 63.4 W	-20 °C...+40 °C
41 03E13K03 ⁽²⁾	200 V DC	58.9 W	max. 60.7 W	-20 °C...+35 °C
41 03E14K00	24 V DC	77.2 W	max. 81.1 W	-20 °C...+40 °C
41 03E16K00	24 V DC	83.4 W	max. 85.6 W	-20 °C...+40 °C
41 03E18K00	24 V DC	106.1 W	max. 108.9 W	-20 °C...+40 °C

(1) Nominal power under consideration of the winding tolerance

(2) Variant can be filled with hydraulic oil

[16] **Test report**

The test results are recorded in the confidential test report IB-16-3-122 of 2017-07-03.

The test documents are part of the test report and they are listed there.

Summary of the test results

The DC stroke solenoid of type 41 03E**K** fulfils the requirements of explosion protection for electrical equipment of group II, category 2G in type of protection increased safety "e" for explosion group IIC and temperature class T4.

[17] **Specific conditions of use**

1. The permissible ambient temperature range for the solenoid type 41 03E13K03 is -20 °C...+35 °C.
2. A fuse corresponding to the rated current (max. $3 \times I_B$ according to IEC 60127-2-1) or, respectively, a motor protective switch with short circuit and thermal rapid release (corresponding to the rated current) has to be connected in series to each solenoid.
3. The interrupting transient overvoltage of the solenoid must be limited in accordance with the specifications of the manufacturer by use of a voltage-depended resistor or other suitable means.

[18] **Essential health and safety requirements**

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item [9], the following are considered relevant to this product, and conformity is demonstrated in the test report:

None

[19] **Drawings and Documents**

The documents are listed in the test report.

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