

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



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

[3] EU-Type Examination Certificate Number **IBExU17ATEX1042 X** | Issue 1

[4] Equipment: **Rotary encoder**
Type: A**100*-*****

[5] Manufacturer: TR-Electronic GmbH

[6] Address: Eglshalde 6
78647 Trossingen
GERMANY

[7] This product and any acceptable variation thereto are 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-21-3-0089.

[9] Compliance with the essential health and safety requirements has been assured by compliance with:
EN IEC 60079-0:2018/AC:2020-02 EN 60079-1:2014/AC:2018-09 EN 60079-31:2014
Except in respect of those requirements listed at item [18] of the schedule.

[10] The sign "X" placed after the certificate number 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 db IIC T6...T4 Gb
 II 2D Ex tb IIIC T80 °C...T130 °C Db
-40 °C ≤ T_a ≤ +40 ... +75 °C

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(Notified Body number 0637)

Certificates without seal and signature are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

Freiberg, 2021-09-27

[13]

Schedule

[14]

Certificate number IBExU17ATEX1042 X | Issue 1

[15] **Description of product**

The Rotary encoder type A**100*-***** is used with built-in systems to record angle modifications for the stationary use in explosive gas and dust atmospheres in the equipment categories 2G and 2D. It consists of a flameproof enclosure from stainless steel or aluminium, into which the evaluation electronic is placed to record the position variation. The signal of the position respectively angle modification is transmitted by beared shaft (encoder).

Technical data:

- Nominal voltage: 11 up to 27 V DC
- Max. power input: 3 W (Type „58“)
6 W (Type „75“)
- Max. speed: 3,000 or 6,000 min⁻¹
- Ambient temperature range: -40 °C up to +40 °C ... 75 °C
- Property class fastening screws: A4-50
- IP-Degree of protection according to EN 60529: IP65 (without shaft seal)
IP67 (with shaft seal)

Maximum ambient temperature		Speed (min ⁻¹)					
		with shaft seal		without shaft seal			
	Temp. class	3000	6000		3000	6000	
Alu	T4 / T130 °C	75 °C					
	Power	6 W					
	T5 / T95 °C	60 °C		50 °C	75 °C	60 °C	
	Power	6 W	3 W	6 W	6 W		
	T6 / T80 °C	50 °C	40 °C		60 °C	50 °C	
	Power	6 W					
Inox	T4 / T130 °C	60 °C	50 °C	40 °C	75 °C		
	Power	6 W	3 W	6 W	6 W		
	T5 / T95 °C	X			60 °C	50 °C	40 °C
	Power				6 W	3 W	6 W
	T6 / T80 °C	X			50 °C	40 °C	X
	Power				3 W	6 W	

Changes compared to issue 0 of this certificate:

The encoder complies with the requirements of the current standard editions of EN 60079 and is marked with the equipment protection level.

[16] **Test report**

The test results are recorded in the confidential test report IB-21-3-0089 of 2021-09-27.
The test documents are part of the test report and they are listed there.

Summary of the test results

The Rotary encoder type A**100*-***** fulfils the requirements of the explosion protection for equipment of group II, category 2G in the type of protection flameproof enclosure "db" as well as group II, category 2D in type of protection dust explosion protection by enclosure "tb".

[17] Special conditions for use

1. The maximum ambient temperature of the equipment depends on the temperature class, the design with or without shaft seal, the maximum dissipation power and the speed. The appropriate classification for each design is specified in the above table as well as in the operating instruction.
2. The Rotary encoder is equipped with cable glands by the manufacturer or the operating company. At own selection it has to be noticed that they are suitable and certified for the service temperature given in the operating instruction. The special conditions and safety instructions contained in the respective certificate have to be observed.
3. Also the higher service temperatures for the single variants have to be noticed at the selection of the cable, the accurate values are specified in the operating instruction. The requirements of EN 60079-14, paragraph 10.6, also have to be observed.
4. Unused openings for cable entries have to be closed durably with suitable screw plugs, which are confirmed for explosion protection according to EN 60079-1, Group IIC.
5. Repairs of the flameproof joints must be made in compliance with the constructive specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 3 and 4 of EN 60079-1.
6. Only fastening screws M4x40-T20 A4-50 according to EN ISO 14580, specified by the manufacturer, shall be used.
7. High charging processes have to be avoided at use in explosive dust atmospheres.

[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:

- not applicable -

[19] Drawings and documents

The documents are listed in the test report.

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