

[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 **IBExU13ATEX1005 X** | Issue 3

[4] Equipment: **Limit switch module**  
Type: DRE and DRIE

[5] Manufacturer: **ROTECH Antriebselemente GmbH**

[6] Address: **Im Katzentach 16-18**  
**76275 Ettlingen**  
**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-23-3-0013.

[9] Compliance with the essential health and safety requirements has been assured by compliance with:

EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-11:2012 EN 60079-31:2014

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:

Type DRE: II 2G Ex db IIC T6...T4 Gb II 2D Ex tb IIC T80 °C...T105 °C Db

Type DRIE: II 2G Ex ia IIC T6...T4 Gb II 2D Ex ia IIC T80 °C...T105 °C Db

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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, 2023-03-31

[13] **Schedule**

[14] **Certificate Number IBExU13ATEX1005 X | Issue 3**

[15] **Description of product**

The Limit switch modules type DRE and DRIE serve to the end position feedback with mechanical switches or inductive sensors, reed contacts, potentiometers and/or electronic boards from various manufacturers as well as the possibility of the connection of separately certified explosion protected actuating solenoids of pneumatic valves.

The flameproof enclosure consists of the enclosure base with actuation shaft and mounting console as well as the cover with optional position indicator. The electric connection is carried out via direct Ex d cable glands.

Technical data:

- IP-Degree of protection according to EN 60529: IP65
- Property class fastening screws: A2-70 according to ISO 4762
- Thread for cable glands: M20x1.5 or NPT1/2"
- Minimum ambient temperature: -60 °C ... -20 °C
- Maximum ambient temperature: +60 °C, +75 °C or +85 °C
- Temperature class: T6, T5 or T4
- Max. Surface temperature for dust: T80 °C, T95 °C or T105 °C

Electrical values (type DRE)

- Rated voltage: up to 250 V
- Rated current: up to 4 A
- Rated cross section: up to 4 mm<sup>2</sup>

Only intrinsically safe fed switches or separately certified intrinsically safe sensors are used at the Limit switch module type DRIE.

Intrinsically safe values (type DRIE with mechanical switches, supply with linear characteristic)

- Voltage  $U_i$  (max.): 24 V    30 V    40 V    50 V    60 V
- Current  $I_i$  (max.): 160 mA    100 mA    57 mA    38 mA    25 mA
- Inner values switches:  $C_i = 1$  nF,  $L_i = 1$   $\mu$ H

Typical values (type DRIE with separately certified intrinsically safe sensors)

- Typical voltages: 8 V DC
- Measuring plate detected:  $\geq 3$  mA
- Measuring plate not detected:  $\leq 1$  mA

The accurate values of the used sensors are listed in the operating instruction. An isolating switch amplifier according to the specification of the sensor manufacturer must be used.

*Variations compared to Issue 2 of this certificate:*

- Addition of a NPT thread for cable glands
- Extension of the maximum ambient temperature to +85 °C also for type DRIE with mechanical switches

[16] **Test report**

The test results are recorded in the confidential test report IB-23-3-0013 of 2023-03-24. The test documents are part of the test report and they are listed there.

*Summary of the test results*

The Limit switch module type DRE fulfils the requirements of explosion protection for equipment of Group II, Category 2G, type of protection flameproof enclosure "db" and Category 2D, type of protection dust ignition protection by enclosure "tb".

The Limit switch module type DRIE fulfils the requirements of explosion protection for equipment of Group II, Category 2G and 2D, type of protection intrinsic safety "ia".

**[17] Special conditions for use**

- The Limit switch modules type DRE and DRIE can be used in an ambient temperature range from -60 °C up to +60 °C, +75 °C or +85 °C. The temperature class and the maximum surface temperature for dust depends to the maximum ambient temperature.
- The permitted minimum ambient temperature depends on the used switches and sensors and is specified on the type plate for the individual variants.
- The selection of cable glands and connecting cables depends on the respective ambient temperature range. For type DRE the cable glands must be suitable and certified accordingly and the corresponding requirements of EN 60079-14, sections 10.6 and 10.7 must be observed.
- All unused openings for cable entries must be durably closed with suitable blanking elements, for type DRE they must be certified for explosion protection according to EN 60079-1 for group IIC or EN 60079-31 for group IIIC.
- For type DRE, 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 2 and 3 of EN 60079-1.
- Only the fastening screws specified by the manufacturer (property class min. A2-70) according to ISO 4762 may be used for type DRE.
- For type DRIE, the interconnection of intrinsically safe circuits must be tested and certified separately. The detailed characteristic values are specified in the operating instruction. An isolating switch amplifier according to the specification of the sensor manufacturer must be used.

**[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:

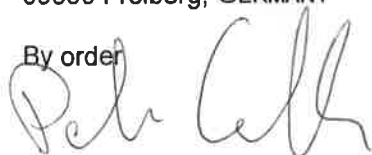
- not applicable -

**[19] Drawings and documents**

The documents are listed in the test report.

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By order



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Freiberg, 2023-03-31