[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 **IBExU20ATEX1095 X** | Issue 0

[4] Product: **Resistance thermometers and thermocouples**
Type: Ex System Rüster E-BUZ und E-KF-OV

[5] Manufacturer: Paul Rüster & Co. GmbH

[6] Address: Dorfplatz 11
14532 Stahnsdorf
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-20-3-0088.

[9] Compliance with the essential health and safety requirements has been assured by compliance with:
EN IEC 60079-0:2018, EN IEC 60079-7:2015:A1:2018 and 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:

Ex II 2G Ex eb IIC T6...T2 Gb
Ex II 2D Ex tb IIIC T85 °C...T230 °C Db

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By order

Dipl.-Ing. [FH] Henker

Zertifizierungsstelle Explosionsschutz IBExU Institut für Sicherheitstechnik GmbH Kenn-Nr. 0637
- Seal -
(notified body number 0637)

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, 2021-01-06

[13] **Schedule**

[14] **Certificate number IBExU20ATEX1095 X** | Issue 0

[15] **Description of product**

The Resistance thermometers and thermocouples are used to convert a temperature at a measuring point into an electrical value. The temperature is measured either by means of temperature measuring resistors or thermocouples.

The resistance thermometers and thermocouples are manufactured in different versions. There are variants that are manufactured with a connection head and socket including terminals. These can be optionally equipped with various process connections. Alternatively, there are cable temperature sensors where the measuring element is located in a metal sleeve and can be connected via a permanently connected connection cable.

Technical data

- Degree of protection:	minimum IP64
- Ambient temperature range:	-55 °C up to +230 °C -40 °C up to maximum +90 °C, applies for connection head
- Measuring temperature range:	-55 °C up to +230 °C

Electrical data

- Maximum voltage U_{max}:	30 V
- Maximum current I_{max}:	10 mA
- Maximum permitted power P_{max}:	100 mW

For the use in gas explosive atmospheres the following applies:

R_{th} = 0.5 K/mW

For the use in dust explosive atmospheres the following applies:

R_{th} = 0.1 K/mW

TX = maximum media temperature + R_{th} * P_{in} + Safety margin of 4 K

TX...maximum surface temperature assigned

[16] **Test report**

The test results are recorded in the confidential test report IB-20-3-0088 of 2021-01-06.
The test documents are part of the test report and they are listed there.

Summary of the test results

The Resistance thermometers and thermocouples mentioned under [4] fulfil the requirements of explosion protection for electrical equipment of group II and category 2G in type of protection increased safety "eb" as well as in category 2D in type of protection Equipment dust ignition protection by enclosure „tb"

[17] **Specific conditions of use**

- The assignment of the temperature class and the max. surface temperature has to be taken from the operating instructions according to the design, the ambient temperature and the maximum power fed in.
- The permissible media temperature depends on the maximum permissible input power, the assigned temperature class and the ambient temperature range. The permissible ambient temperature range at the connection device must be observed. Further information can be found in the instructions.
- In order to comply with the above-mentioned temperature class / maximum surface temperature, suitable measures (e.g. connecting a fuse) must be taken to ensure that the maximum power loss P_{max} is not exceeded also under fault conditions.
- Due to the process, higher or lower operating temperatures may occur at the measuring inserts; however, the temperature at the connection head must not exceed the range of -40 °C to +90 °C. Depending on the application, this must be ensured by the user by means of a suitable length of the measuring inserts and the protective fittings. Accordingly, the length of the neck tube must be selected so that the heating or cooling of the connection head by the process is negligible.

- The temperature sensors must be connected to the equipotential bonding system of the user through the installation.
- The external cables must be suitable for the assigned operating temperature range.

[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:

[19] **Drawings and Documents**
The documents are listed in the test report.

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09599 Freiberg, GERMANY

By order

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Freiberg, 2021-01-06