



[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 **IBExU17ATEX1140 X** | Issue 0

[4] Product: **Temperature Sensor System**  
Type: OK...f

[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-17-3-0166.

[9] Compliance with the essential health and safety requirements has been assured by compliance with: EN 60079-0:2012+A11:2013, EN 60079-11:2012 and EN 60079-26:2015 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 1/2G Ex ib IIC T6...T1 Ga/Gb

⊕ II 1/2D Ex ib IIIC Tx Da/Db

with electrically non-conductive coated protective tubes:

⊕ II 1/2G Ex ib IIB T6...T1 Ga/Gb

⊕ II 1/2D Ex ib IIIC Tx Da/Db

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By order

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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, 2018-01-05

[13] **Schedule**

[14] **Certificate number IBExU17ATEX1140 X | Issue 0**

[15] **Description of product**

The intrinsically safe temperature sensors type OK...f are installed with a protective tube for the temperature measurement in vessels. This construction guarantees a safe zone separation. The temperature sensors serve for measurement of hazardous gas or dust atmospheres.

Maximum allowable temperatures:

The resistance thermometers have a resistance of heat transfer (in air) of maximum 74 K/W, measured from the surface of the point of the sensor near the sensor supplied with electrical power. For thermocouples, a self-heating does not have to be considered.

|   |   |
|---|---|
| Ambient temperature (connection head)       | -40 °C to +40 °C to +85 °C (depending on the transmitter) |
| Measuring temperature (point of the sensor) | -40 °C to +400 °C (see operating instruction)             |

Measuring electric circuit:

Type of protection Intrinsic Safety Ex ib IIC

with the maximum values:

without transmitter

with transmitter

$U_i \leq 30 \text{ V}$

$U_i \leq 29 \text{ V}$

$P_i \leq 750 \text{ mW}$

$P_i \leq 705 \text{ mW}$

$I_i \leq 100 \text{ mA}$

effective inner inductivity  
effective inner capacitance

negligible  
negligible  
or: mentioned values of head measuring transmitters  
and the connected types of cables have to be  
observed

Further details are specified in the test documents.

[16] **Test report**

The test results are recorded in the confidential test report IB-17-3-0166 of 2018-01-05.  
The test documents are part of the test report and they are listed there.

*Summary of the test results*

The temperature sensor system mentioned under [4] fulfils the requirements of explosion protection for electrical equipment of Group II and categories 1/2G and 1/2D in type of protection Intrinsic Safety.

[17] **Specific conditions of use**

- The installation and the operation of the temperature sensors has to be carried out according to the requirements of the operating instructions. Special instructions apply to the protective tube.
- The maximum permitted temperatures of the media depend on the electric output of the power supply under fault conditions.
- The extended ambient temperature range is mentioned in the operating instructions.
- When using electrically non-conductive coated protection tubes, the temperature sensors are suitable for the use in explosion group IIB and must not be installed in areas close to high charging processes.
- Tx results from the permitted process temperature and self-heating depending on supplied power. Further information is mentioned in the operating instructions.

[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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