



[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 **IBExU03ATEX1072 X** | Issue 1

[4] Product: **Slot-Resistance-Thermometers and Slot-Thermocouples**  
Type: System V...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-17-3-0167.

[9] Compliance with the essential health and safety requirements has been assured by compliance with:  
EN 60079-0:2012+A11:2013 and EN 60079-11:2012  
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 ia IIC T6...T3    or     II 2G Ex ib IIC T6...T3

IBExU Institut für Sicherheitstechnik GmbH  
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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, 2018-01-22

[13]

## Schedule

[14]

**Certificate number IBExU03ATEX1072 X | Issue 1**

[15]

### **Description of product**

The Slot-Resistance-Thermometers and Slot-Thermocouples type V...f are used as push-in sensors for thermal control of winding slots of electric motors, generators or transformers. The sensors consist of a two-part carrier body on which the various sensors are arranged from an insulated, wound resistance wire or from a solitary sensor (thin-film or SMD) or from thermocouples. The sensors are tightly encapsulated. In the shielded version, the entire thermometer is tightly wrapped with a wire cloth hose that can carry the currents.

The Slot-Resistance-Thermometers and Slot-Thermocouples have a thermal resistance (from surface in air) of maximum 20 K/W.

#### Technical data:

Ambient temperature range	T <sub>amb</sub>	-55 °C ... +180 °C (maximum values)
<b>Electrical data</b>		
Maximum input voltage	U <sub>i</sub>	30 V
Maximum input power	P <sub>i</sub>	600 mW
Maximum internal capacitance	C <sub>i</sub>	negligible
Maximum internal inductance	L <sub>i</sub>	negligible
Resistance thermometer	Type	Pt100, Pt1000, Ni100, Ni1000, Tk5000, PTC, NTC
Thermocouples	Type	K, L, J, N S, R, B, T
Electrical strength	U <sub>ss</sub>	2U+1000V (U= rated voltage of machine)
Circuit mode of resistance thermometer		2-, 3- or 4-core

Further details are specified in the test documents.

*Variations compared to EC-Type Examination Certificate and its amendments:*

The minimum permissible ambient temperature is -55 °C.

[16]

### **Test report**

The test results are recorded in the confidential test report IB-17-3-0167 of 2018-01-22.

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 2G 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.
- The maximum permitted temperatures of the medium depend on the electric output of the power supply under fault conditions.
- The increased ambient temperature range 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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