

IBExU Institut für Sicherheitstechnik GmbH
An-Institut der TU Bergakademie Freiberg



[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 **IBExU19ATEX1067 X** | Issue 0

[4] Product: **Temperature sensor**
Type: PR-SPA-EX-MH

[5] Manufacturer: EPHY-MESS GmbH

[6] Address: Berta-Cramer-Ring 1
65205 Wiesbaden
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-17-3-0077.

[9] Compliance with the essential health and safety requirements has been assured by compliance with: EN IEC 60079-0:2018, EN 60079-7:2015, EN 60079-11:2012 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:

II 2G Ex eb IIC T6...T3 Gb
 II 2D Ex tb IIC T80 °C...T185 °C Db
 II 2G Ex ia IIC T6...T3 Gb
 II 2D Ex ia IIC T80 °C...T185 °C Db
-60 °C ≤ T_a ≤ +180 °C (maximum values)

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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, 2019-06-18

[13]

Schedule

[14]

Certificate number IBExU19ATEX1067 X | Issue 0

[15] **Description of product**

The temperature sensors of the type PR-SPA-EX-MH were developed especially for the installation in (blind) hole drillings at electric motors (generators), gears or other electric machines. The temperature sensor is designed on the basis of a passive resistor or thermocouple or other which is installed in a stainless steel tube. The temperature is converted into an electrical quantity (voltage, resistance) at a measuring point. A permanently connected cable is fed out the metal tube for the electrical connection. The intrinsically safe versions can also be equipped with a connector plug or bimetal switch. The sensors are designed for use in hazardous areas requiring EPL Gb or Db equipment.

Technical data:

ambient temperature range:	-60 °C ... +180 °C (maximum values, depending on the sensor used)
maximum process temperature:	+180 °C
degree of protection:	at least IP64

Electrical data:

parameter		Ex e, Ex t	Ex i
maximum voltage	Chip, class A	$U_n = 17 \text{ V DC}$	$U_i = 17 \text{ V DC}$
	Chip, class B	$U_n = 25 \text{ V DC}$	$U_i = 25 \text{ V DC}$
maximum current	Chip, class A	$I_n = 55 \text{ mA}$	$I_i = 55 \text{ mA}$
	Chip, class B	$I_n = 80 \text{ mA}$	$I_i = 80 \text{ mA}$
maximum power	Chip, class A	$P_n = 1 \text{ W}$	$P_i = 1 \text{ W}$
	Chip, class B	$P_n = 2 \text{ W}$	$P_i = 2 \text{ W}$

[16] **Test report**

The test results are recorded in the confidential test report IB-17-3-0077 of 2019-06-14.

The test documents are part of the test report and they are listed there.

Summary of the test results

The temperature sensors type PR-SPA-EX-MH fulfil the requirements of explosion protection for equipment group II and category 2G in type of protection Increased Safety and category 2D with Protection by Enclosure. In type of protection Intrinsic Safety the requirements of category 2G and 2D are fulfilled.

[17] **Specific conditions of use**

- The temperature sensors have to be installed protected against mechanical load. Sharp bending as well as mechanical stress concentrated to small spots of the sensor shall be avoided.
- The permitted media temperature depends on the maximum permitted input power, the temperature class assigned and the ambient temperature range. The minimum ambient temperature is limited by the components used. Further information are mentioned in the manual.
- The cable ends have to be connected to suitable terminals as fixed installation or outside of explosive atmosphere.
- The supply unit shall provide a connector which corresponds to the method of connection of the thermometer (2-, 3- or 4-wire connection). It is to be considered that the electrical values are not exceeded.

[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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Freiberg, 2019-06-18