



[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 **IBExU17ATEX1087 X** | Issue 1

[4] Product: **Temperature sensor**
Type: R9 and T9

[5] Manufacturer: Günther GmbH, Temperaturmesstechnik

[6] Address: Bauhofstraße 12
90571 Schwaig
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-22-3-0158.

[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 60079-31:2014
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 db IIC T6...T3 Gb

II 2D Ex tb IIIC T80°C...T195°C Db

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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, 2023-09-29

[13]

Schedule

[14]

Certificate number IBExU17ATEX1087 X | Issue 1

[15]

Description of product

The temperature sensors of type R9 and T9 are used for registration, control and threshold monitoring of process temperatures and are intended for use in potentially explosive atmospheres the require equipment of category 2G or 2D.

The temperature sensors are implemented as resistance thermometers (type R9) or thermocouples (type T9), which transform the temperature at the measurement point into an electrical parameter (resistance, voltage). In combination with appropriate transmitters temperatures in the range of -196 °C...+600 °C (resistance thermometer) or, resp., -40 °C...+1800 °C (thermocouples) can be registered.

The temperature sensors are implemented in type of protection flameproof enclosure "d". They consist of a replaceable transducer with potted lead wires and a flameproof terminal head with integrated terminal or electronic transmitter. Both components are connected via a neck tube and a screw joint. The distal end of the transducer equipped with a protection tube is inserted into the process that has to be investigated. The protection tube as an armature with process connection individually designed for the respective application is not part of the electrical equipment. Moreover, the temperature sensors are dustproof and comply with the requirements of type of protection dust ignition protection by enclosure "t".

Technical data:

- | | |
|--|--|
| - Maximum voltage: | 5 V |
| - Maximum current: | 2 mA |
| - Temperature measurement range: | -196 °C...+600 °C (resistance thermometer)
-40 °C...+1800 °C (thermocouple) |
| - Ambient temperature at terminal head: | -20 °C...+60 °C, for Temperature Technology
type XD...
-20 °C...+85 °C, for Limatherm type XD-A... |
| - Permissible service temperature at compound: | -20 °C...+85 °C or +150 °C |

*Variations compared to issue 0 of this certificate:**Variation 1*

Change of the casting compound of the cemented joint of the transducer

Variation 2

Corresponding change of the permissible service temperature at the compound

Variation 3

Conformity with current standard EN IEC 60079-0:2018

[16]

Test report

The test results are recorded in the confidential test report IB-22-3-0158 of 2023-09-29.

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

Summary of the test results

The temperature sensor of type R9 and T9 fulfils the requirements of explosion protection for electrical equipment of group II, category 2G and 2D in type of protection flameproof enclosure "d" and dust ignition protection by enclosure "t" for explosion group IIC and IIIC.

[17] Specific conditions of use

1. The temperature sensors of type R9 and T9 can be used under the following conditions:

Ambient temperature at terminal head	Temperature class / max. surface temperature at terminal head ⁽¹⁾	Maximum power dissipation (P_{max}) ⁽²⁾	Permissible terminal head variants
-20 °C...+60 °C	T6 / T80°C	4 W	Limatherm type XD-A...or Temperature Technology type XD...
-20 °C...+85 °C	T5 / T95°C	1.9 W	Limatherm type XD-A...

(1) Equipment with temperature class T6 or T5 are also suitable for use in gas atmospheres with temperature class T4 - T1.

(2) In combination with internal consumers, such as electronic transmitters

2. For compliance with the above mentioned temperature class / maximum surface temperature at the terminal head, the maximum power dissipation P_{max} must not be exceeded. This must be guaranteed under fault conditions by adequate means (e.g. it must be guaranteed by adequate means (e.g. a fuse connected in series to the consumer).
3. For equipment variants with ambient temperature > 60 °C heat-resistant gable glands and connection cables (min. 95 °C) must be used.
4. By means of the process, higher or lower operating temperature can occur at the transducers; however, the temperature at the compound of potted lead wires must not exceed the range of -20 °C to +85 °C or -20 °C...+150 °C, as specified by the manufacturer. This must be ensured by the manufacturer under the respective operational conditions by means of an adequate length of the transducer and the protection armature. Referring to this, the length of the neck tube must be selected so that heating or cooling of the terminal head by means of the process is negligible.
5. The temperature class and the maximum surface temperature of the total equipment must then be specified under consideration of the temperature at the terminal head (≤ 80 °C / ≤ 95 °C for T6 / T5; see Table) or at the compound (≤ 85 °C / ≤ 150 °C for T6...T5 / T4...T3), whichever is the higher.
6. The measuring tip of the transducer is not explosion-proof and must therefore not have direct contact to the potentially explosive atmosphere. Consequently, a sealed mounting of the measuring tip is required using the protective armature provided.
7. Flameproof joints are not intended to be repaired.
8. At the installation of a terminal block or electronic transmitter in the flameproof terminal head, at least 40 % of the cross-sectional area must remain free to permit unimpeded gas flow.
9. The terminal head must not be exposed to high charging processes. Cleaning is permitted only with a damp cloth.

[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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