

Translation

Type Examination Certificate

Equipment intended for use in potentially explosive atmospheres
Directive 2014/34/EU

Type Examination Certificate Number: **BVS 17 ATEX E 011 X**

Product: **Temperature sensor type nA-4.48.**.** / nA-4.91.**.****

Manufacturer: **Dittmer GbR**

Address: **Carl-Zeiss-Strasse 19, 47475 Kamp-Lintfort, Germany**

This product and any acceptable variations thereto are specified in the appendix to this certificate and the documents referred to therein.

DEKRA EXAM GmbH 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 Report No. BVS PP 17.2009 EU.

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012 + A11:2013 **General requirements**
EN 60079-15:2010 **Type of Protection "n"**

If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the appendix to this certificate.

This 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.

The marking of the product shall include the following:

 **II 3G Ex nA IIC T4 Gc**

DEKRA EXAM GmbH
Bochum, 2017-01-23

Signed: Dr. Franz Eickhoff

Certifier

Signed: Dr. Michael Wittler

Approver



13 **Appendix**
 14 **Type Examination Certificate**

BVS 17 ATEX E 011 X

15 **Product description**

15.1 **Subject and type**

Temperature sensor type nA-4.48.**.** and nA-4.91.**.**

Temperature sensor type nA-4.48.**.**

nA-4.48.**1)**2)

| | | | |
|------|-------------|-------------|-----------------|
| **1) | Tube length | in mm x 10 | (max. 1000 mm) |
| **2) | Wire length | in mm x 100 | (max. 20000 mm) |

Temperature sensor type nA-4.91.**.**

nA-4.91.**1)**2)

| | | | |
|------|-------------|--------------------|-----------------|
| **1) | Flexible | length in mm x 100 | (max. 5000 mm) |
| **2) | Wire length | in mm x 100 | (max. 20000 mm) |

15.2 **Description**

The temperature sensors 4.48.**.** and 4.91.**.** are used for stationary purposes in hazardous areas of equipment and machinery. The sensors are available with one or two Pt100 sensors or either one or two thermocouples. The measuring circuit can be carried out with 2 up to 8 wires depending on the variants. All variations are equipped with a fixed connection cable and all connections are insulated against the housing. All wire ends are dismantled and the conductors are crimped with end sleeves.

For type nA-4.48.**.** the sensor is fixed in a rigid sealed stainless steel tube and will be equipped with a separately certified cable gland. The temperature sensor is fixed in the sensor tip.

For type nA-4.91.**.** a flexible wire is used instead of a rigid tube. The sensor tip is cemented to the wire end. The probe is extended by an internal wire and connected to the connection cable by a brazed joint.

The junctions to the connection cable are also created with a brazed joint and insulation and are all potted in epoxy resin.

15.3 **Parameters**

15.3.1 Design with one or two Pt100 Resistors

| | | |
|------------------------|-------|----------------|
| Voltage | U_i | 40 V AC/DC |
| Current | I_i | 40 mA |
| Power | P_i | 300 mW (T4) *) |
| Measuring current max. | I_n | 3 mA |
| Inner capacity | C_i | 75 pF/m |
| Inner inductivity | L_i | 0.6 μ H/m |

*) Total value for two Pt100 resistors

Design with one or two thermocouples

| | | |
|-------------------|----------------|------------|
| Voltage | U_i | 40 V AC/DC |
| | U_o (200 °C) | 15 mV |
| Current | I_i | 40 mA |
| Power | P_i | 900 mW *) |
| Inner capacity | C_i | 75 pF/m |
| Inner inductivity | L_i | 0.6 µH/m |

*) Total value for two thermocouples

15.3.2 Thermal data

Temperature measurement:
Measuring temperature range at sensor tip -40 °C up to +130 °C

Ambient temperature range:
Sensor type 4.48.** ** -40 °C ≤ T_{amb} ≤ +100 °C
Sensor type 4.91.** ** -40 °C ≤ T_{amb} ≤ +80 °C

16 **Report Number**

BVS PP 17.2009 EU, as of 2017-01-23

17 **Special Conditions for Use**

- The temperature sensor must be installed in a way that it is protected against mechanical damage.
- The installation cable must be installed with a suitable strain relief and by fixed cable installation.
- The electrical connection must be carried out in a separately certified terminal box for this purpose (f.e. in type of protection "d", "e" or "nA").
- The temperature sensor must be protected with appropriate measures against transients.
- If the mounting is carried out in insulating material, a separate potential equalization must be ensured.

18 **Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are covered by the standards listed under item 9.

19 **Drawings and Documents**

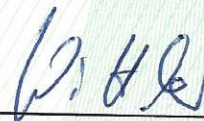
Drawings and documents are listed in the confidential report.

We confirm the correctness of the translation from the German original.
In the case of arbitration only the German wording shall be valid and binding.

DEKRA EXAM GmbH
Bochum, dated 2017-01-23
BVS-Ret/Pz/Mu A 20130020



Certifier



Approver