



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx FTZU 16.0015X** Page 1 of 4 [Certificate history:](#)
Issue 0 (2016-05-30)

Status: **Current** Issue No: 1

Date of Issue: 2017-09-14

Applicant: **TERMOAPARATURA WROCLAW**
ul. Rzemielnicza 4, Zebice, 55-010
Swieta Katarzyna
Poland

Equipment: **Temperature sensors series XI-TTP..., XI-TRP..., XI-TTE..., XI-TOPE...**

Optional accessory:

Type of Protection: **Intrinsic safety**

Marking: Ex ia I Ma
Ex ia IIC T6-T1 resp. Ts (450 °C ≤ Ts ≤ 1200 °C) Ga/Gb , Ex ia III C Ts (Ts ≤ 1200 °C) Da/Db
Product Marking (XI-TOPE601): Ex ia I Mb, Ex ia IIIC Ts (Ts ≤ 180 °C) Db , Ex ia IIC T6-T1 Gb

Approved for issue on behalf of the IECEx
Certification Body:

Dipl. Ing. Lukáš Martinák

Position:

Head of the Certification Body

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

**Fyzikálne technický zkusební ústav
(Physical -Technical Testing Institute)
Pikartská 7, 71607 Ostrava - Radvanice
Czech Republic**





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Manufacturer: **TERMOAPARATURA WROCLAW**
ul. Rzemielnicza 4, Zebice, 55-010
Swieta Katarzyna
Poland

Additional
manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[CZ/FTZU/ExTR16.0015/00](#)

Quality Assessment Report:

[CZ/FTZU/QAR12.0003/02](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The temperature sensor consists of a measuring probe, which contain (at its end) an one or two sensing resistors or an one or two thermocouples. The second end of the measuring probe is provided with a plug or permanently connected cable. It is a simple apparatus according to the clause 5.7 of IEC 60079 11:2011.

The measuring probe can be protected by additional measure resistant at certain process conditions.

If the temperature measurement are applied in pressure vessel, the pressure tests must be carried out with built-in sensor well.

Range of temperature measurement:

-50°C to +550°C for resistor sensor

-40°C to +1200°C for thermocouples

Intrinsically safe parameters:

a) For resistor sensors:

$U_i = 10 \text{ V}$; $I_i = 10 \text{ mA}$ (Pt 100); $I_i = 3 \text{ mA}$ (Pt 500, Pt 1000); $P_i = 100 \text{ mW}$;

$L_i = 0.3 \text{ mH}$ / 1 m of cable, $C_i = 0,25 \text{ nF}$ / 1 m of cable

b) For thermocouple sensors

$U_o \leq 3 \text{ V}$, $I_o \leq 10 \text{ V}$, $P_o \leq 30 \text{ mW}$,

$L_i = 0.3 \text{ mH}$ / 1 m of cable length, $C_i = 0,25 \text{ nF}$ / 1 m of cable of length

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. The sensing part of the sensor has a surface temperature equal to process fluid temperature and so this fact is decisive for temperature class (for T6 to T1) or maximum surface temperature T_s .

2. When process temperature is above 450°C it is necessary to indicate the maximum surface temperature T_s equal to maximum measuring range of the sensor (maximum measuring range mustn't be exceeded).

3. The temperature of the others sensor surfaces, that are in contact with explosive atmosphere must be determined individually after installation on site and mustn't exceed ignition temperature of explosive gas atmosphere and/or exceed $2/3 T_{cl}$ – ignition temperature of dispersed dust.

4. Surface temperature of the sensor covered by excessive dust layer mustn't exceed ignition temperature T_{max} determined in accordance with Annex B of IEC 60079-10-2:2015 in dependence on a thickness of the layer.

5. The circuits of sensors are grounded. It shall be taken into account during installation.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

There is added new version of temperature sensors XI-TOPE series, model XI-TOPE601. The sensor is determined for temperature measuring as device category M2 of Group I or device category 2 of Group II.

Intrinsically safe parameters (XI-TOPE601):

Ui = 30 V

Ii = 20 mA

Pi = 100 mW

Li = 0,2mH / 1 m

Ci = 0,25nF / 1m