



EC-Type Examination Certificate

(1)

(2)

Equipment or Protective Systems Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC

(3) EC-Type Examination Certificate Number:

FTZÚ 09 ATEX 0121X

(4)

Equipment or protective system: **Flameproof temperature sensors
type XD-TOP.; XD-APTOP...; XD-TT...; XD-APTT...**

(5)

Manufacturer: **TERMOAPARATURA WROCLAW**

(6)

Address: **Zębice, ul. Rzemieślnicza 4, 55-010 Święta Katarzyna, Poland**

(7)

This equipment or protective system and any of acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8)

The Physical Technical Testing Institute, notified body number 1026 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report N°

09/0121 dated May 2009

(9)

Compliance with Essential Health and safety requirements has been assured by compliance with:

**EN 60079-0:2006; EN 60079-1:2007; EN 60079-26:2007; EN 61241-0:2006;
EN 60241-1:2004; EN 60241-10:2004**

(10)

If the sign „X“ is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11)

This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and testing of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

(12)

The marking of the equipment or protective system shall include following:

 **I M2 Ex d I
II 2G Ex d IIC TX
II 1D Ex tD A20 IP65, TX**

This EC-Type Examination Certificate is valid till: **31 May 2014**

Responsible person:


Dipl. Ing. Šindler Jaroslav
Head of certification body



Date of issue: 14.05.2009

Number of pages: 3
Page: 1/3

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Physical Technical Testing Institute
Ostrava-Radvanice

(13)

Schedule

(14) **EC-Type Examination Certificate N° FTZÚ 09 ATEX 0121X**

(15) Description of Equipment or Protective System:

The temperature sensor consists of measuring insert, which on the end contains an single or double platinum sensing resistor and/or an one or double thermocouple. The second end of the measuring insert is provided with terminal block or transmitter/display protected by connection head type: XD-AD, XD-ADwin, XD-SD.

d1 opening in the head's body along with bush on the measuring insert creates flameproof joint.

To the **D1** opening is screw-on an additional thermowell, which separate measuring insert from the process, or a gland which seal measuring insert from water and solid particles.

Connection heads were approved by separate certificate: FTZU 03 ATEX 0074U (XD-AD, XD-ADwin) and FTZU 06 ATEX 0326U (XD-SD).

Technical parameters.

Mentioned in Application manual

(16) Report No. : 09/0121

(17) Special conditions for safe use:

- 17.1 The sensing part of the sensor has a surface equal to process temperature, and so this fact is decisive for temperature class (T6- T1), or maximum surface temperature.
- 17.2 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 of the sensor (maximum measuring range mustn't be exceeded).
- 17.3 The surface temperature of the sensor head depends on sensor type, installation method, process temperature, ambient temperature and power dissipation of applied transmitter and display. It must be determined individually after installation and mustn't exceed permitted service temperature T_{serv} of connection head, the transmitter, display and also ignition temperature of explosive gas atmosphere and/or 2/3 T_{cl} - ignition of dispersed dust.
- 17.4 The temperature of the other sensor surface, 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 2/3 T_{cl} – ignition temperature of dispersed dust.
- 17.5 Surface temperature of the sensor covered by excessive dust layer mustn't exceed ignition temperature T_{max} determined in accordance with Annex B of EN 61241-10 in dependence on a thickness of the layer.
- 17.6 Maximum range of temperature measurement: -200 to 550°C for resistance sensor and -40 to 1200°C for thermocouple.
- 17.7 Ambient temperature $T_{amb} = -40$ to 75°C for sensor without electronic transmitter for temperature class T6 and process temperature $T_p \leq 75^\circ\text{C}$.
- 17.8 The ambient temperature and temperature class of the sensor with transmitter/display depends on their power dissipation.
- 17.9 Sensor must be effectively grounded to the vessel wall.
- 17.10 Using of the head with the window is limited by $T_{serv} = 85^\circ\text{C}$.

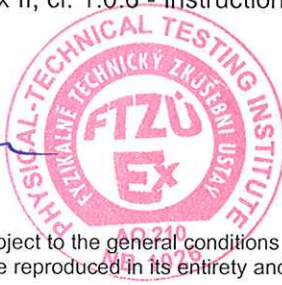
(18) Essential Health and Safety Requirements:

Covered by standards mentioned in (9) of this certificate.

The Directive 94/9/EC, Annex II, cl. 1.0.6 - Instruction has to be accepted.

Responsible person:

Dipl. Ing. Sindler Jaroslav
Head of certification body



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Number of pages: 3
Page: 2/3

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Physical Technical Testing Institute
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(13)

Schedule

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LIST OF DOCUMENTATION

Drawing No.	Documentation	Date of issue	
	Application manual No. M-0804	18.03.2009	
	Catalogue of temperature sensors for hazardous areas C-0804	18.03.2009	
PR-071-09	Sensor Ex d without thermowell, without transmitter	06.01.2009	
PR-072-09	Sensor Ex d without thermowell, with transmitter	06.01.2009	
PR-073-09	Sensor Ex d without thermowell, with transmitter and display	06.01.2009	
PR-074-09	Sensor Ex d with thermowell, without transmitter	06.01.2009	
PR-075-09	Sensor Ex d with thermowell, with transmitter	06.01.2009	
PR-076-09	Sensor Ex d with thermowell, with transmitter and display	06.01.2009	
PR-077-09	Sensor Ex d without thermowell	06.01.2009	
PR-078-09	Thermowell type P	18.03.2009	A
PR-079-09	Thermowell type G	18.03.2009	A
PR-080-09	Thermowell type GN	06.01.2009	
PR-081-09	Thermowell type GB	06.01.2009	A
PR-082-09	Thermowell type BT	06.01.2009	
PR-083-09	Thermowell type FT	06.01.2009	
PR-084-09	Thermowell type T	18.03.2009	A
PR-085-09	Thermowell type SW	06.01.2009	
PR-086-09	Thermowell type NT	06.01.2009	
PR-087-09	Thermocouple TC measuring insert	06.01.2009	
PR-088-09		06.01.2009	
PR-089-09		06.01.2009	
PR-090-09		06.01.2009	
PR-091-09	Resistance RTD measuring insert	06.01.2009	
PR-092-09		06.01.2009	
PR-093-09		06.01.2009	
PR-094-09		06.01.2009	
PR-095-09	Thermocouple TC measuring insert	06.01.2009	
PR-096-09		06.01.2009	
PR-097-09		06.01.2009	
PR-098-09		06.01.2009	
PR-099-09	Resistance RTD measuring insert	06.01.2009	
PR-100-09		06.01.2009	
PR-101-09		06.01.2009	
PR-102-09		06.01.2009	
PR-103-09	Connection diagram	06.01.2009	
PR-104-09		06.01.2009	
PR-105-09	Connection diagram	06.01.2009	
PR-106-09	Marking label	06.01.2009	
PR-107-09		06.01.2009	
PR-109-09		06.01.2009	
PR-108-09	Threaded ½ NPT plug	06.01.2009	

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Page: 3/3

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