



AC 038



KDB ATTEX



Central Mining Institute Certification Body Product Certification Team KD „Barbara” ul. Podleska 72 43-190 Mikołów, tel. (+48) 32 3246550 fax. (+48) 32 3224931 www.gig.katowice.pl

This certificate and its schedules may only be reproduced in its entirety and without change



# [1] EC-TYPE EXAMINATION CERTIFICATE

[2] Equipment, protective systems and components intended for use in potentially explosive atmospheres - Directive 94/9/EC

[3] EC – type examination certificate:

**KDB 08ATEX135**

[4] Equipment or protective system:

**Temperature head sensors type \*T\*\*-Exd-\*\*-\*\*...**

[5] Manufacturer:

**LIMATHERM SENSOR Sp. z o.o.**

[6] Address:

**ul. Tarnowska 1, 34-600 Limanowa**

[7] This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Central Mining Institute, Notified Body number 1453 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment and 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 number KDB No. 08.120 [T-6180]

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

EN 60079-0:2004; EN 60079-1:2004+AC:2006; EN 61241-0:2006 ; EN 61241-1:2004+AC:2006

[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 and construction of the specified equipment and protective system in accordance with Directive 94/9/EC. Further requirements of the Directive may 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 the following:

II 2GD

Ex d IIC T6

Ex tD A21 IP68 T85°C

lub

I M2

Ex d I



SPECJALISTA ds. CERTYFIKACJI URZĄDZEŃ PRZECIWWYBUCHOWYCH

mgr inż. Wojciech Kwiatkowski

Date of issue: 27.05.2008

Date of English version: 10.12.2009



KIEROWNIK Zespołu Certyfikacji Wyrobów KD "BARBARA" Mikołów

doc. dr hab. inż. Krzysztof Cybulski



[13]

## SCHEDULE

[14]

### EC-Type Examination Certificate KDB 08ATEX135

[15] **Description:**

Temperature head sensors type \*T\*\*-Exd-\*\*-\*\* are designed to measure temperature of devices, gases, fluids, and dusts. The measuring elements which are resistors or thermocouples are placed in measuring inserts. The measuring insert is impenetrably filled by magnesium oxide, so that it is fully protected against the penetration of gas or dust particles.

The connection head is made as flameproof enclosure for which the measuring inserts are fitted. The measuring inserts creates with the head the flameproof joint.

Connection head has certificates:

- FTZU 03 ATEX 0074U with Supplement No. 1÷9, marking: II 2GD Ex d tD IIC;

- FTZU 06 ATEX 0326U with Supplement No. 1, marking: I M2 Ex d I; II 2GD Ex d tD IIC.

Depending on the construction type (with or without a sight glass) and seal type applied, the head can be used under the following ambient temperatures:

- from -50<sup>0</sup>C to +150<sup>0</sup>C with „o-ring” VQM (silicon) seal;

- from -50<sup>0</sup>C to +85<sup>0</sup>C with „o-ring” VQM (silicon) seal (version with sight glass);

- from -25<sup>0</sup>C to +200<sup>0</sup>C with „o-ring” VR 1 (fluoroelastomer) seal.

Ingress protection of this head is IP66÷68 (down to 1 m depth depending on the cable gland).

In the case when measuring element is install in zone „0”, the measuring insert is additionally protected by metal casing with 1mm thick wall.

The following elements can be mounted inside the head:

1. terminal block with clamps connected with coated resistors or thermocouple

2. non-intrinsically safe transmitters connected with coated resistors or thermocouple.

The temperature class of the connection head is limited by power dissipation inside enclosure and depends on the type of the head according to table below.



[13]

## SCHEDULE

[14]

### EC-Type Examination Certificate KDB 08ATEX135

HEAD type XD-A\*

$T_{amb}$	Class T6 Permissible temperature rise $\Delta T(K)$	Max. $P_{dissip.}$ [W]	Class T5 Permissible temperature rise $\Delta T(K)$	Max. $P_{dissip.}$ [W]
40°C	40	10,0	55	15,5
55°C	25	6,0	40	10,0
70°C	10	1,9	25	6,0
85°C	-	-	10	1,9

HEAD type XD-SD

$T_{amb}$	Class T6 Permissible temperature rise $\Delta T(K)$	Max. $P_{dissip.}$ [W]	Class T5 Permissible temperature rise $\Delta T(K)$	Max. $P_{dissip.}$ [W]
40°C	40	9,0	55	13,0
55°C	25	4,7	40	9,0
70°C	10	1,45	25	4,7
85°C	-	-	10	1,45

In the case to supply coated sensors in according to the maximal parameters:

$U_i = 10V$ ;  $P_i = 50mW$ ;  $I_i = 10mA$  (Pt100);  $I_i = 3mA$  (Pt500, Pt1000)

increase temperature of the surface do not exceed 5°C.

After installation of the equipment measures should be take to ensure that the external components temperature, being in contact with explosive mixture, will not exceed its temperature class.

In case of mechanic danger, the measuring inserts should be protected against mechanic damage.



[13]

**SCHEDULE**

[14]

**EC-Type Examination Certificate KDB 08ATEX135**

Coding Method of temperature sensors type Exd

T	Exd																				
- single without transmitter: <b>without mark.</b>																					
- double without transmitter: <b>2</b>																					
- single with transmitter: <b>AP</b>																					
- resistor: <b>OP</b> ; thermocouple: <b>TJ, TK, TT, TN</b>																					
- sheath type: <b>GB, GN, P, SW, SWG, SWT, T, I*</b>																					
- aluminium connection head: <b>AS1, AS2, AS3, AS4</b>																					
- stainless steel: <b>NS1, NS2</b>																					
- sheath material: <b>1.4541, 1.4571, 1.4301, 1.7335, 1.7380, 1.4841, 1.4742</b>																					
- immersion length: L(mm) (for the enclosure type I*)																					
- immersion length: L(mm) / diameter of enclosure 'd' (mm)																					
- diameter of coat/tube: (for the enclosure type I*): <b>3, 4, 5, 6, 8</b>																					
- dimension of the enclosure thread (enclosure type: GN, GB, SWG): <b>M20x1.5; G1/2; 1/2NPT</b>																					
- class and type of resistor (enclosure type: P, SW, I*): <b>aA**, aB**</b>																					
- class of thermo-element (enclosure type: P, SW, I*): <b>1, 2</b>																					
- type of flange (enclosure type: T, SWT): <b>DN20, DN25</b>																					
- class and type of resistor (enclosure type: GN, GB, T, SWG, SWT): <b>aA**, aB**</b>																					
- class of thermo-element (enclosure type: GN, GB, T, SWG, SWT): <b>1, 2</b>																					
- measuring circuit (enclosure type: SW, I*, P): <b>2-, 3-, 4-wires for RTD;</b>																					
- type of junction (enclosure type: SW, I*, P): <b>SO, SOA, SOB, SP for TC</b>																					
- measuring circuit (enclosure type: SWT, SWG, T, DN, GB): <b>2-, 3-, 4-wires for RTD;</b> or junction type: <b>SO, SOA, SOB, SP for TC</b>																					
- measuring range of transmitter (enclosure type: P, I*, SW): output signal / lower temperature, top temperature °C																					
- measuring range of transmitter (enclosure type: GN, GB, T, SWG, SWT): output signal / lower temperature, top temperature °C																					
- type of transmitter applied (enclosure type: SW, I*, P): according to the specifications																					
- type of transmitter applied (enclosure type: SWT, SWG, T, GB, GN): according to the specifications																					
- diameter of cable for cable's gland (enclosure type: P, I*, SW): <b>a(3.2-8.7mm), b(6.1-11.7 mm), c(6.5-14 mm)</b>																					
- diameter of cable for cable's gland (enclosure type: GN, GB, T, SWG, SWT): <b>a(3.2-8.7mm), b(6.1-11.7 mm), c(6.5-14 mm)</b>																					

I\* - version without enclosure;  
 \*\* - 1 for Pt100; 5 for Pt500; 10 for Pt1000





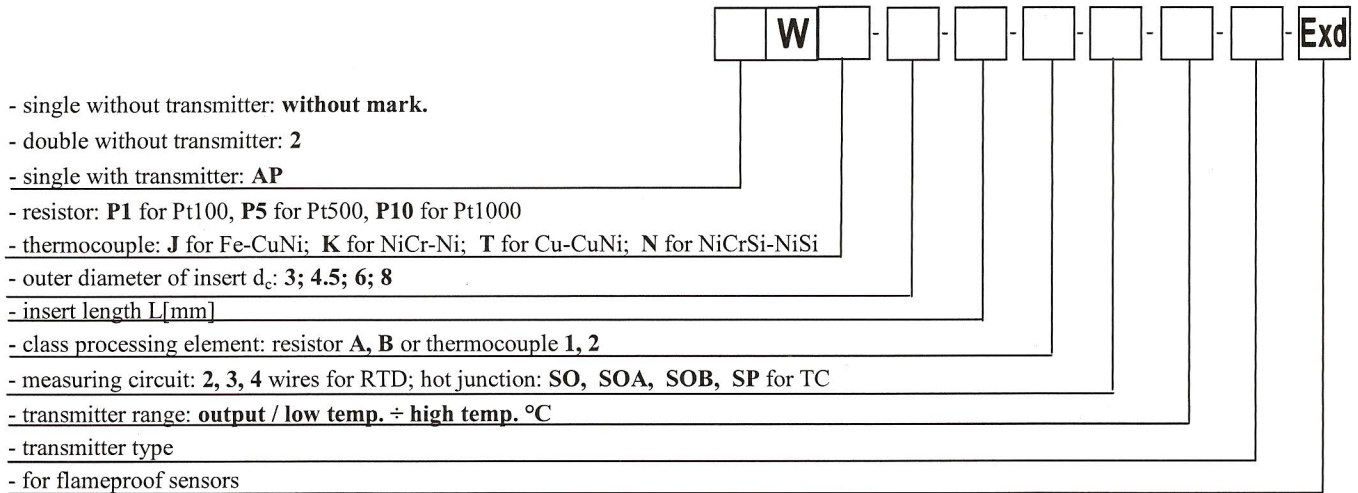
[13]

## SCHEDULE

[14]

### EC-Type Examination Certificate KDB 08ATEX135

Coding Method of measuring inserts:



#### Technical parameters:

Coated resistors and thermocouples can work with any secondary devices (such as measuring instrument, control units or temperature transducers) having the output signal:

- $U = 0 \div 10$  V
- $I = 0 \div 10$  mA (Pt100);  $I = 0 \div 3$  mA (Pt500, Pt1000).

The supply parameters of temperature transmitters mounted inside the measuring head agree with the specifications as given in the relevant catalogues of those transmitters.





[13]

## SCHEDULE

[14]

**EC-Type Examination Certificate KDB 08ATEX135**

[16] **Test report:**

Report no. KDB Nr 08.120

[17] **Special condition for safe use:**

- Temperature head sensors make as Exd and use to measure in zone „0” („20”), install between zone „0” and „1” („20” and „21”) have to posses limited parameters of the measurement elements to circuit:  
 $U_i = 10V$ ;  $P_i = 50mW$ ;  
 $I_i = 10mA$  (Pt100);  $I_i = 3mA$  (Pt500, Pt1000)  
When measuring inserts are install in zone „0”, it is necessary to protect them by metal casing with 1mm thick wall.
- The range of ambient temperature can be limited by cable gland parameters.
- Ingress protection of the head sensor is IP66÷68 (to depth 1m; depend on cable gland)

[18] **Essential health and safety requirements:**

Met by compliance with standards listed in section 9. of this Certificate.

[19] **Descriptive documents:**

DTR-Exd-01 z datą 27.04.08r.  
AZ-0781 z datą 21.05.08r.  
AZ-0782 z datą 27.05.08r.  
AZ-0756 z datą 25.04.08r.  
AZ-0752 z datą 25.04.08r.  
AZ-0751 z datą 25.04.08r.  
AZ-0750 z datą 25.04.08r.  
AZ-0749 z datą 25.04.08r.  
AZ-0748 z datą 25.04.08r.  
AZ-0747 z datą 25.04.08r.  
AZ-0746 z datą 25.04.08r.  
AM-0744 z datą 25.04.08r.





[13]

## SCHEDULE

[14]

### EC-Type Examination Certificate KDB 08ATEX135

AZ-0743 z data 25.04.08r.  
AS-0742 z data 25.04.08r.  
AS-0741 z data 25.04.08r.  
AS-0740 z data 25.04.08r.  
AZ-0739 z data 24.04.08r.  
AM-0738 z data 24.04.08r.  
AM-0737 z data 24.04.08r.  
AM-0736 z data 24.04.08r.  
AM-0735 z data 22.04.08r.  
AZ-0734 z data 22.04.08r.  
AM-0733 z data 22.04.08r.  
AZ-0732 z data 22.04.08r.  
AZ-0731 z data 22.04.08r.  
AZ-0729 z data 22.04.08r.  
AM-0728 z data 22.04.08r.  
AM-0727 z data 22.04.08r.  
AZ-0726 z data 22.04.08r.  
AM-0725 z data 22.04.08r.  
AZ-0724 z data 22.04.08r.  
AM-0723 z data 22.04.08r.  
AM-0722 z data 22.04.08r.  
AZ-0721 z data 22.04.08r.  
AM-0720 z data 22.04.08r.  
AM-0719 z data 22.04.08r.  
AZ-0718 z data 22.04.08r.  
AM-0717 z data 22.04.08r.  
AZ-0716 z data 21.04.08r.  
AZ-0715 z data 21.04.08r.  
AZ-0714 z data 21.04.08r.  
AZ-0713 z data 21.04.08r.  
AZ-0712 z data 21.04.08r.  
AZ-0711 z data 21.04.08r.  
AM-0339 z data 14.02.07r.  
AM-0333 z data 29.03.06r.  
AM-0332 z data 29.03.06r.

