CERTIFICATE

[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 04ATEX172X

[4] Equipment or protective system:

Universal heat detector type TUN-38Ex

[5] Manufacturer:

Zakład Urządzeń Dozymetrycznych „POLON-ALFA" Spółka z o.o.

[6] Address:

ul. Glinki 155, 85-861 Bydgoszcz

[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. 04.287 [T-5181]

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

EN 50014:1997+A1:1999+A2:1999; EN 50020:2002

[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 component in accordance with Directive 94/9/EC.
Further requirements of the Directive may apply to the manufacturing process and supply of this component. These are not covered by this certificate.

[12] The marking of the component shall include the following:

II 2G EEx ib IIC T5/T6

Date of issuance: 20.10.2004

Page 1 of 3

Date of English version: 27.02.2014

Specjalista ds. Certyfikacji Urządzeń Przeciwwybuchowych
dr inż. Michał Górny

Główny Instytut Górnictwa w Katowicach – Jednostka Certyfikująca – Zespół Certyfikacji Wyrobów KD Barbara

KIEROWNIK Zespołu Certyfikacji Wyrobów KD "BARBARA" Mikołów
dr hab. inż. Krzysztof Cybulski, prof. GIG

KDB ATEX

Central Mining Institute
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Product Certification Team
KD „Barbara"
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[13] # SCHEDULE

[14] **EC-Type Examination Certificate KDB 04ATEX172X**

[16] **Test report:**

Report no. KDB Nr 04.287

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

Ambient temperature range:
-25°C to +65°C for the temperature class T6
-25°C to +85°C for the temperature class T1...T5

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

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

[19] **Descriptive documents:**

Technical documentation and drawings:		
Czujka temperatury TUN-38Ex	B/E280-00.00	2004.05.10
Płytka P1 TUN-38Ex kompl.	C/E280-02.00	2004.08.06
Schemat ideowy płytki P1	C/E280-02.00/A	2000.11.27
Płytka TUN-38Ex Z.M.	C/E280-02.01	2004.05.07
Płytka P1 TUN-38Ex	C/E280-02.02 Ark.1-5	2004.05.10
Szablon	C/E280-02.03	2004.05.10
Płytka P2 TUN-38Ex kompl.	C/E280-03.00	2000.11.27
Schemat ideowy płytki P2	D/E280-03.00/A	2000.11.27
Płytka P2 TUN-38Ex Z.M.	D/E280-03.01	2000.11.27
Płytka P2 TUN-38Ex	D/E280-03.02 Ark.1-5	2000.11.27
Tabliczka	D/E280-00.02	2004.10.18
Universal heat detector type TUN-38Ex Installation and Maintenance Manual IK-E280-001GB		

[13] # SCHEDULE

[14] **EC-Type Examination Certificate KDB 04ATEX172X**

[15] **Description:**

The universal heat detector type TUN-38Ex is designed for detection of fire hazard in confined spaces in which temperature increases in the first phase of fire.
The enclosure of the detector is made of plastic and it has two chambers. The electronic circuit, encapsulated by PU filling compound is placed inside one of the chambers. The temperature detector (thermistor) is placed outside the chamber. In the chamber available to the user there are terminals connecting the detection line as well as the electrical clamps determining the operating parameters (detector class). Connecting cables are brought into the chamber through the cable glands.

Technical parameters:

Operating voltage	20V +20% -15%
Max. operating current	100µA
Alarm current (at 20V)	20mA
Minimum operating temperature limit	-25°C
Relative humidity	≤ 95% at 40°C
Detector class	A1R; A1S; BR; BS

Parameters of intrinsically safe circuits:

Detection line (Terminals 2 and 3):

Ui = 28V
Ii = 93mA
Pi = 0,66W

Ci = 16,5nF
Li - negligibly small

The line connecting the detector with the detection indicator (Terminals 1 and 2):

Uo = 28V
Io = 93mA
Po = 0,66W

$Co = 83nF - 16,5nF - C_k$
C_k - cable capacity of detection line
$Lo = 4,2mH - L_k$
L_k - cable inductance of detection line

[1]

SUPPLEMENT No 1
to EC-TYPE EXAMINATION CERTIFICATE
KDB 04ATEX172X

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

[3] Equipment and protective system:

Universal heat detector type TUN-38Ex

[4] Manufacturer:

Zakład Urządzeń Dozymetrycznych

„POLON-ALFA" Spółka z o.o.

[5] Address:

ul. Glinki 155, 85-861 Bydgoszcz

[6] Changes were introduced to design or construction of component in accordance with the specification set out in the Schedule attached to this certificate and the documents therein referred to.

This document shall be held with the original Certificate.

The examination and test results are recorded in confidential report KDB No. 04.287-1 [T-5181]

[7] Marking:

Ex II 2G, EEx ib IIC T6

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

EN 60079-0:2006; *(PN-EN 60079-0:2009);*

EN 60079-11:2007; *(PN-EN 60079-11:2007);*

[9] The marking will change to:

Ex II 2G Ex ib IIC T5/T6

Specjalista ds. Certyfikacji Urządzeń Przeciwwybuchowych
dr inż. Michał Górny

Główny Instytut Górnictwa w Katowicach Jednostka Certyfikująca Zespół Certyfikacji Wyrobów KD Barbara

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Product certification progam no: PCW-ISO/IEC-1b
CODE ICS 13.230

Date of issue: 23.02.2010
Date of English version: 27.02.2014

[10] # SCHEDULE

[11] **Supplement no 1 to EC-Type Examination Certificate KDB 04ATEX172X**

[12] **Description of the variation to the equipment or protective system:**

Any constructional changes have not been introduced in the device. Construction documentation:

- includes safety analysis carried out in compliance with the requirements of EN 60079-0:2006, EN 60079-11:2007.
- design of the nameplate has been changed

Technical data:

As in the certificate KDB 04ATEX172X

[13] **Special conditions for safe use:**

As in the certificate KDB 05ATEX172X

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PCA
POLSKIE CENTRUM AKREDYTACJI
CERTYFIKACJA WYROBÓW
AC 038

INTERNATIONAL IAF ACCREDITATION FORUM

KDB ATEX

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Product certification progam no: PCW-ISO/IEC-1b
CODE ICS 13.230

[1]

SUPPLEMENT No 2
to EC-TYPE EXAMINATION CERTIFICATE
KDB 04ATEX172X

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

[3] Equipment and protective system:

Universal heat detector type TUN-38Ex

[4] Manufacturer:

Polon-Alfa

Spółka z ograniczoną odpowiedzialnością Sp. k.

[5] Address:

ul. Glinki 155, 85-861 Bydgoszcz

[6] Changes were introduced to design or construction of component in accordance with the specification set out in the Schedule attached to this certificate and the documents therein referred to.

This document shall be held with the original Certificate.

The examination and test results are recorded in confidential report KDB No. 04.287-2 [T-5181]

[7] Marking:

II 2G Ex ib IIC T5/T6

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

EN 60079-0:2009; *(PN-EN 60079-0:2009);*

EN 60079-11:2012; *(PN-EN 60079-11:2012);*

[9] The marking will change to:

II 2G Ex ib IIC T5/T6 Gb

Specjalista ds. Certyfikacji
Urządzeń Przeciwwybuchowych
dr inż. Michał Górny

Główny Instytut Górnictwa w Katowicach
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Date of issue: 14.02.2014
Date of English version: 27.02.2014

[10] # SCHEDULE

[11] **Supplement no 2 to EC-Type Examination Certificate KDB 04ATEX172X**

[12] **Description of the variation to the equipment or protective system:**

The parameters of intrinsically safe circuits of the universal heat detector type TUN-38Ex have been changed. Marking of the device and the name of the manufacturer have also been changed from:

Zakład Urządzeń Dozymetrycznych
„POLON-ALFA” Spółka z o.o.
ul. Glinki 155, 85-861 Bydgoszcz

to:

Polon-Alfa
Spółka z ograniczoną odpowiedzialnością Sp. k.
ul. Glinki 155, 85-861 Bydgoszcz

The assessment of safety of the device was carried out in compliance with the requirements of EN 60079-0:2009, EN 60079-11:2012.

The analysis states that the device meets the requirements of the standards listed in paragraph. 8 of this certificate.

Technical data:

Parameters of intrinsically safe circuits:

Detection line (Terminals 2 and 3):

Ui = 28 V
Ii = 99 mA
Pi = 0,66 W
Ci = 16,5 nF
Li - negligibly small

The line connecting the detector with the detection indicator (Terminals 1 and 2):

Uo = 28 V
Io = 99 mA
Po = 0,66 W

Co = 83 nF - 16,5 nF - C_k
C_k - cable capacity of detection line
Lo = 2,5 mH - L_k
L_k - cable inductance of detection line

[13] **Special conditions for safe use:**

Without changes