



CERTIFICATE



[1] **SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE**

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

[3] Supplementary EC-Type Examination Certificate:

KDB 04ATEX170X/1

[4] Equipment and protective system:

Ultraviolet flame detector type PUO-35Ex

[5] Manufacturer:

**Zakład Urządzeń Dozymetrycznych
„POLON-ALFA” Spółka z o.o.**

[6] Address:

**ul. Glinki 155
85-861 Bydgoszcz**

[7] This supplementary certificate extends EC-Type Examination Certificate No. KDB 04ATEX170X to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said Certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This Supplementary Certificate shall be held with the original Certificate.

The examination and test results are recorded in confidential report number KDB No. 04.285-1 [T-5179]

[8] Marking:



II 2G EEx ib IIC T6

Date of issuance: 01.08.2006

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Date of English version: 20.02.2014

**Specjalista ds. Certyfikacji
Urządzeń Przeciwwybuchowych**

dr inż. Michał Górny



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

KDB ATEX



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
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and without change



[9]

SCHEDULE

[10] **Supplementary EC-Type Examination Certificate KDB 04ATEX170X/1**

Description of the variation to the equipment or protective system:

A new protective coating made of modified electrostatic paint based on nickel (Ni) was introduced. The paint is applied on the external surface of the enclosure of the ultraviolet flame detector type PUO-35Ex. The flame detector type PUO-35Ex is intended to detect the flame arising during fire hazard.

[11] **Technical data:**

Technical data of modified electrostatic paint based on nickel (Ni):

- 70% - conductive paint based on nickel (Ni),
marked - 0402-050-0010, manufactured by P.H.P. "ALMA-COLOR"
Sp. z o.o. Gniew,
- 30% - "autorenolak".

Marking:

Ultraviolet flame detector type PUO-35Ex should be marked:



II 2G Eex ib IIC T6





[9]

SCHEDULE

[10] **Supplementary EC-Type Examination Certificate KDB 04ATEX170X/1**

[12] **Report:**

- Report no. KD-50014-02/3630 "Sprawozdanie rezystancji izolacji".
Date of issuance: 31.07.2006.
- Report no. 15/LBŚ/2006 "Badania klimatyczne. Odporność powierzchniowa powłoki. Przyczepność powłoki do podłoża." Bydgoszcz,
date of issuance: 09.05.2006.

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

Special condition for safe use without changes - certificate no.
KDB 04ATEX170X.

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

Essential health and safety requirements were carried out in
compliance with the requirements of:

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

[15] **Descriptive documents:**

Descriptive documents are supplemented by documents:

- Osłona czujka komp. C/E278-00.01.00 date of issuance: 08.06.2006
- Osłona D/E186-00.00.03 date of issuance: 08.06.2006
- Katalog produktów: farba elektrostatyczna Ni.
- Karta charakterystyki produktu niebezpiecznego - date of update
06.02.2006





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 04ATEX170X

[4] Equipment or protective system:

Ultraviolet flame detector type PUO-35Ex

[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. 04.285 [T-5179]

[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 T6

Date of issuance: 20.10.2004

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Date of English version: 20.02.2014

Specjalista ds. Certyfikacji
Urządzeń Przeciwybuchowych

dr inż. Michał Górny



KIEROWNIK
Zespołu Certyfikacji Wyrobów
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ul. Podleska 72
43-190 Mikołów,
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[13]

SCHEDULE

[14]

EC-Type Examination Certificate KDB 04ATEX170X

[15] **Description:**

The PUO-35 flame detector is designed for detection of flame resulting from a fire hazard. The main part of the device is a detector of ultraviolet radiation and stabilized voltage converter. The detector consists of a enclosure made of aluminum and plastic covered with semiconducting varnish. Inside the enclosure is placed the electronic circuit, encapsulated by electroinsulating filling compound. Connection with detection line is done with a series of slots 30.

Technical parameters:

Operating voltage	20V +20% -15%
Max. operating current	100 μ A
Alarm current (at 20V)	20mA -5mA
Sensitivity (acc. to EN 54-10)	2 class (17m)
Angle of view	120°
Operating temperature range	-10°C ÷ +55°C

Parameters of intrinsically safe circuits:

Detection line (Terminals 1 and 3):

$U_i = 28V$	$C_i = 32,5nF$
$I_i = 93mA$	$L_i = 3mH$
$P_i = 0,66W$	

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

$U_o = 28V$
$I_o = 93mA$
$P_o = 0,66W$

$$C_o = 83nF - 32,5nF - C_k$$

C_k - cable capacity of detection line

$$L_o = 4,2mH - 3mH - L_k$$

L_k - cable inductance of detection line





[13]

SCHEDULE

[14]

EC-Type Examination Certificate KDB 04ATEX170X

[16] **Test report:**

Report no. KDB Nr 04.285

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

- Ambient temperature range: -10°C to +55°C

[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 płomienia PUO-35Ex	B/E186-00.00.00	07.05.2004
Tabliczka	D/E186-00.00.02	30.05.2004
Ośłona	D/E186-00.00.03	07.05.2004
Pokrywa II	E186-00.00.04-1	07.05.2004
Pokrywa komp.	C/E186-01.00.00	05.08.2004
Płytki P1 kompl.	C/E186-01.01.00	05.08.2004
Schemat ideowy płytki P1 PUO-35Ex	C/E186-01.01.00/A	05.08.2004
Transformator TR	C/E186-01.01.01	06.08.2004
Płytki P1 PUO-35Ex Z.M.	C/E186-01.01.04	05.08.2004
Płytki P1 PUO-35Ex	C/E186-01.01.05/Ark.1-6	07.05.2004
Płytki P2 kompl.	C/E186-01.02.00	05.08.2004
Schemat ideowy płytki P2 PUO-35Ex	C/E186-01.02.00/A	05.08.2004
Płytki P2 PUO-35Ex Z.M.	C/E186-01.02.01	05.08.2004
Płytki P2 PUO-35Ex	C/E186-01.02.02/Ark.1-6	07.05.2004
Ultraviolet flame detector type PUO-35Ex Installation and Maintenance Manual IK-E186-001GB		





AC 038



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Główny Instytut Górnictwa
Jednostka Certyfikująca
Zespół Certyfikacji Wyrobów
KD „Barbara”
ul. Podleska 72
43-190 Mikołów,
tel. (+48) 32 3246550
fax. (+48) 32 3224931
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Product certification program
no: PCW-ISO/IEC-1b
CODE ICS 13.230

[1]

SUPPLEMENT No 2
to EC-TYPE EXAMINATION CERTIFICATE
KDB 04ATEX170X



[2]

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

[3]

Equipment and protective system:

Ultraviolet flame detector type PUO-35Ex

[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. 04.285-2 [T-5179]

[7]

Marking:



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:



II 2G Ex ib IIC T6

Specjalista ds. Certyfikacji
Urządzeń Przeciwwybuchowych

inż. Michał Górny



Date of issue: 22.02.2010

Date of English version: 20.02.2014

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[10]

SCHEDULE

[11]

Supplement no 2 to EC-Type Examination Certificate KDB 04ATEX170X

[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 04ATEX170X

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

As in the certificate KDB 04ATEX170X





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KDB ATEX



Główny Instytut Górnictwa
Jednostka Certyfikująca
Zespół Certyfikacji WYROBÓW
KD „Barbara”
ul. Podleska 72
43-190 Mikołów,
tel. (+48) 32 3246550
fax. (+48) 32 3224931
www.gig.katowice.pl

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



[1] **SUPPLEMENT No 3**
to EC-TYPE EXAMINATION CERTIFICATE
KDB 04ATEX170X

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

[3] Equipment and protective system:

Ultraviolet flame detector type PUO-35Ex

[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. 04.285-3 [T-5179]

[7] Marking:

II 2G Ex ib IIC 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 T6 Gb

Specjalista ds. Certyfikacji
Urządzeń Przeciwwybuchowych

dr inż. Michał Górny



KIEROWNIK
Zespołu Certyfikacji WYROBÓW
KD „BARBARA” Mikołów
dr hab. inż. Krzysztof Cybulski, prof. GIG

Date of issue: 14.02.2014

Date of English version: 20.02.2014

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[10]

SCHEDULE

[11]

Supplement no 3 to EC-Type Examination Certificate KDB 04ATEX170X

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

There are no changes in construction of the ultraviolet flame detector type PUO-35Ex that affect the explosion safety. Marking of the device and the name of the manufacturer have 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:

Without changes

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

Without changes

