



EU-TYPE EXAMINATION CERTIFICATE

- [1] Equipment and protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU
- [2] EU – type examination certificate (module B):

KDB 08ATEX224X

issue 1

- [4] Equipment:

**Smart Pressure Transmitter type APC-2000ALW/XX,
APC-2000ALW/XX Ex Safety
Smart Differential Pressure Transmitter type APR-2000ALW/XX,
APR-2200ALW/XX, APR-2000ALW/XX Ex Safety, APR-2000GALW/XX,
APR-2000GALW/XX Ex Safety
Smart Level Probe type APR-2000YALW/XX**

- [5] Manufacturer:

APLISENS S.A.

- [6] Address:

ul. Morelowa 7, 03-192 Warszawa, POLAND

- [7] This product and any acceptable variation thereto is specified in the schedule to this certificate.
- [8] Główny Instytut Górnicwa, Notified Body number 1453 in accordance with Directive 2014/34/EU of 26 February 2014, 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 2014/34/EU. The examination and test results are recorded in confidential report **KDB Nr 08.170-6 [T-6339]**
- [9] Compliance with the Essential Health and Safety Requirements has been met by compliance with:
**EN 60079-0:2012 + A11:2013; EN 60079-1:2014;
EN 60079-11:2012; EN 60079-26:2015; EN 60079-31:2014**
- [10] In case if the sign „X“ is placed after the certificate number, it indicates special conditions for safe use, specified in the schedule to this certificate.
- [11] This EU-type examination certificate relates only to the construction, evaluation and tests of product accordance with Directive 2014/34/EU. The certificate does not include other requirements of the Directive relating to manufacturing process and putting into the market of the equipment or protective device.
- [12] Marking of the equipment shall include:



**I M2 Ex db ia I Mb
II 1/2G Ex ia/db IIC T6/T5 Ga/Gb
II 1/2D Ex ia/t IIIC T85°C/T100°C Da/Db
or**



**II 1/2G Ex ia/db IIC T6/T5 Ga/Gb
II 1/2D Ex ia/t IIIC T85°C/T100°C Da/Db
or**



**I M2 Ex db ia I Mb
II 2G Ex ia/db IIC T6/T5 Gb
II 2D Ex ia/t IIIC T85°C/T100°C Db
or**



**II 2G Ex ia/db IIC T6/T5 Gb
II 2D Ex ia/t IIIC T85°C/T100°C Db**



KDBEx.eu



**KIEROWNIK
Zespołu Certyfikacji Wyrobów
KDB "BARARA" Mikołów
dr hab. inż. Krzysztof Cybulski, prof. GIG**

Date of issue: **06.09.2016 r.**

Date of English version: **06.09.2016 r.**

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Główny Instytut Górnicwa, 40-166 Katowice, Plac Gwarków 1, POLAND (Certification Body accredited by PCA, Nr AC038)

Kopalnia Doświadczalna „BARARA”, ul. Podleska 72, 43-190 Mikołów, POLAND (Certification Team and Laboratory)

This certificate may be reproduced only in its entirety with schedule. The next issue of the certificate replaces the earlier editions.

Issue 0 is the initial certification. The document without signatures and seals is invalid.

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SCHEDULE
EU-type Examination Certificate
KDB 08ATEX224X issue 1



[15] Description:

Pressure transmitters type APC-2000ALW/XX, APC-2000ALW/XX Ex Safety and differential pressure transmitters type APR-2000ALW/XX, APR-2200ALW/XX, APR-2000ALW/XX Ex Safety, APR-2000GALW/XX, APR-2000GALW/XX Ex Safety and level probes type APR-2000Y/ALW/XX work by converting proportional to the measured pressure resistance changes of piezoresistive bridge, located in the single crystal of silicon diaphragm, into a standard current signal $4 \div 20$ mA with HART communications signal.

The basic units of the transmitter and probe is a measuring head (Ex i) with a silicon diaphragm sensor. Measuring head can be equipped with different pressure connections. Inside the head there is the "pressure chamber" filled with manometer liquid. On the side of measured medium it is limited by a diaphragm welded tightly to the head's body (differential pressure transmitters have two separated diaphragms for the inputs: "+" and "-"). The measuring head is mounted in the housing and secured with two screws.

In the heads to measure differential pressure and absolute pressure the tight bushings are applied. For overpressure measurements at a pressure range head to 7MPa, bushings are used with the opening from which a tube connecting the rear side of the measuring diaphragm to the atmosphere is pulled out; there are cylindrical flameproof joints used additionally in this case and in some versions of pressure difference heads. The transmitters with the head versions described above have category 1/2G, 1/2D.

In the versions pressure transmitters APC... and differential pressure transmitters APR... of category 2G and 2D (measured in zone 1 or 21) all pressure heads are allowed, including those without additional flame-proof joints.

Enclosures of transmitters are made of die-cast aluminium alloy or stainless steel. Enclosure consists of a body and two screwed covers (display and electrical connection). The cable line is introduced the enclosure flameproof cable gland with thread M20x1,5 or 1/2NPT depending on the version of the housing body. In the non-used opening the explosion-proof plug (cap) prod. Aplisens S.A is mounted.

The transmitters may be fitted with diaphragm seals, which enable them to be used in a variety of conditions such as thick or highly reactive media, high and low temperatures. Elements of the diaphragm seals can be coated with Teflon.



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In the name of transmitters types the letters "XX" stand for the symbol of process connection used.



Marking:



version with steel enclosure:

 I M2 Ex db ia I Mb
 II 1/2G Ex ia/db IIC T6/T5 Ga/Gb
II 1/2D Ex ia/t IIIC T85°C/T100°C Da/Db
or

 I M2 Ex db ia I Mb
 II 2G Ex ia/db IIC T6/T5 Gb
II 2D Ex ia/t IIIC T85°C/T100°C Db

version with aluminium alloy enclosure:

 II 1/2G Ex ia/db IIC T6/T5 Ga/Gb
 II 1/2D Ex ia/t IIIC T85°C/T100°C Da/Db
or

 II 2G Ex ia/db IIC T6/T5 Gb
 II 2D Ex ia/t IIIC T85°C/T100°C Db

Technical parameters:

Range of the measured pressure:

- 100kPa ÷ 100MPa (APC-2000ALW, APC-2000ALW Ex Safety)
- 160kPa ÷ 7Mpa (APR-2000ALW, APR-2200ALW, APR-2000ALW Ex Safety)
- 10 kPa ÷ 10 kPa (APR-2000GALW, APR-2000GALW Ex Safety)

Range of the measured liquid level:

- 0 ÷ 10mH₂O (APR-2000YALW)

Output signal:

- 4÷20mA in a two-wire system + HART

Supply voltage:

- 10,5V ÷ 55V- standard version
- 10,5V ÷ 45V- MID version
- 16V ÷ 45V- safety version

Ingress protection:

- IP66 / IP67

Ambient temperature:

- 40 ÷ 45°C/75°C (depending on the temperature class)
- 50°C ÷ 45°C/75°C (special version)
- 25 ÷ 55°C (MID version)



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[16] Test report:

„Sprawozdanie z oceny ATEX” KDB Nr 08.170-6

[17] Special conditions for safe use:

- Only those elements can be used as replacing ones which are specified in the descriptive documentation;
- Some of the permitted gaps in the flameproof joints are smaller and the lengths of the flameproof joints are greater than the ones specified in table 1 EN 60079-1. The relevant information for the user is included in the manual;
- In areas where there is a risk of dust explosion, transmitters in aluminium alloy casing covered with lacquer and transmitters with plastic rating plates or with diaphragm seals covered by Teflon should be installed in a way to prevent electrostatic charging according to the operation manual.

[18] Essential health and safety requirements:

Met by compliance with standards listed below:

EN 60079-0:2012 + A11:2013; EN 60079-1:2014;
EN 60079-11:2012; EN 60079-26:2015; EN 60079-31:2014
(PN-EN 60079-0:2013-03 + A11:2014-03; PN-EN 60079-1:2014-12;
PN-EN 60079-11:2012; PN-EN 60079-26:2015-04; PN-EN 60079-31:2014-10)

Document's history:

- EC-Type Examination Certificate KDB 08ATEX224X of 30.07.2008 with all supplements, initial certification (issue 0).
- EU-Type Examination Certificate KDB 08ATEX224X issue 1, **this document**, there is a modification in the construction of the pressure transmitters type APC-2000ALW/XX, differential pressure transmitters type APR-2000ALW/XX, APR-2200ALW/XX, and level probes type APR-2000YALW/XX. Pressure transmitters and differential pressure transmitters of category 2 have been introduced. The new performances of the pressure transmitters and differential pressure transmitters APC-2000ALW/XX Ex Safety, APR-2000ALW/XX Ex Safety, APR-2000GALW/XX, APR-2000GALW/XX Ex Safety have been introduced. The changes in the parameters of power supply to 55V and a minimum temperature of -50°C (transmitters in special version) have been introduced.

