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- [1] **EU-TYPE EXAMINATION CERTIFICATE**
- [2] Equipment and protective systems intended for use in potentially explosive atmospheres. Directive 2014/34/EU
- [3] EU – type examination certificate (module B):  
**KDB 17ATEX0035** **issue 0**
- [4] Equipment:  
**Electropneumatic positioner type**  
**APIS-XX0-...-REx-...-IHX-..., APIS-XX1-...-REx-...-IHX-...,**  
**APIS-XX2-...-REx-...-IHX-... and APIS-XX4-...-REx-...-IHX-...**
- [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 Górnictwa, 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 17.043 [T-7453]**
- [9] Compliance with the Essential Health and Safety Requirements has been met by compliance with:  
**EN 60079-0:2012 + A11:2013; EN 60079-11:2012**
- [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:



**II 2G Ex ia IIC T5/T6 Gb**



**KDBEx.eu**

mgr inż. Piotr Madej

ATEX Certification  
Specialist



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

Date of issue: **28.06.2017 r.**

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(Certification Body-Certification Team-Kopalnia Doświadczalna "Barbara" Mikołów)

Certification Body accredited by PCA, Nr AC038

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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**[15] Description:**

The APIS type electropneumatic positioner cooperates with executive elements in order to ensure a unique dependence between positioner analogue current input signal and pneumatic output signal. The APIS type positioner is simultaneously power amplifier of input signal enabling feeding of control signal to the actuator's chamber of power of 100% of supply pressure.

The APIS type electropneumatic positioner consists of the following components:

- electronic board assembly,
- electropneumatic transducer or transducers,
- external potentiometric displacement transducer,
- casing body with cover,
- pneumatic connectors,
- mechanical coupling unit.

Construction of the positioner is based on a 16-bit microprocessor system. In this microprocessor system the measurements are taken and set point and measured values are determined. The difference between above values is converted according to a non-linear control algorithm to the control signal. This signal is then converted in the electropneumatic converter to the output pneumatic signal. Pneumatic signal is directed to the actuator.

The positioner is electric supplied from the two-conductor current source. An external source of supply  $10 \div 30$  VDC is required for execution with an additional analogue input signal.

Electronic elements, keyboard, and display are located on printed-circuit board covered with a silicon and varnish layer.

The enclosure of positioner is made of aluminium alloy. There are two chamber in the housing of the positioner: main and connection. The two chambers are separated by a partition made of metal. In the main chamber are located electronic plate assembly, electropneumatic transducer / transducers, pressure sensor. A terminal strip and two protective terminals are located in the connection chamber. An external protective earth terminal is located outside the enclosure.

The following are also screwed into the enclosure:

- pneumatic connections for connecting the positioner to the pneumatic actuator and pneumatic supply
- manometers for measuring the pressure of the supply and output pressures.



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**SCHEDULE**  
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**Technical parameters:**

Input signal: 4 ÷ 20 mA two-wire technique  
compatible with HART communication  
protocol

Output signal: 4 ÷ 20 mA

Supply pressure: 140 ÷ 800 kPa

Pneumatic input signal: 0 ÷ 100% of supply pressure

Ambient temperature:

- Execution without manometers  
and with stainless steel manometers: -40°C ÷ 45°C for T6,  
-40°C ÷ 80°C for T5
- Executions with manometers in  
stainless steel and carbon steel  
enclosure: -25°C ÷ 45°C for T6,  
-25°C ÷ 60°C for T5

Ingress protection: IP65

Intrinsic safety parameters:

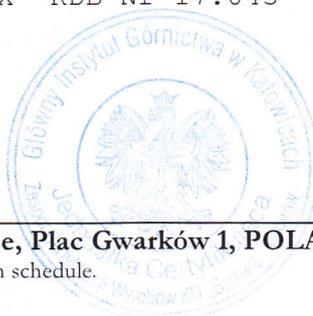
Input unit, terminals 1, 2 and output unit, terminals 7, 8:

$C_i = 11 \text{ nF}$ ,  $L_i = 0,205 \text{ mH}$

- for supply from source with a linear characteristics:  
 $U_i = 30 \text{ V DC}$ ,  $I_i = 0,13 \text{ A}$ ,  $P_i = 1 \text{ W}$  for temperature class T5 and  $T_a \leq 80^\circ\text{C}$   
 $U_i = 30 \text{ V DC}$ ,  $I_i = 0,1 \text{ A}$ ,  $P_i = 0,75 \text{ W}$  for temperature class T6 and  
 $T_a \leq 45^\circ\text{C}$ ;
- for supply from source with a rectangular characteristics:  
 $U_i = 24 \text{ V DC}$ ,  $I_i = 0,05 \text{ A}$ ,  $P_i = 1,2 \text{ W}$  for temperature class T5 and  
 $T_a \leq 80^\circ\text{C}$ ;  
 $U_i = 24 \text{ V DC}$ ,  $I_i = 0,025 \text{ A}$ ,  $P_i = 0,6 \text{ W}$  for temperature class T6 and  
 $T_a \leq 45^\circ\text{C}$ ;
- for supply from source with a trapezoidal characteristics  
 $U_i = 24 \text{ V DC}$ ,  $I_i = 0,1 \text{ A}$ ,  $P_i = 1,2 \text{ W}$ ,  $U_q = 48 \text{ V}$  for temperature class T5 and  
 $T_a \leq 80^\circ\text{C}$ ;  
 $U_i = 24 \text{ V DC}$ ,  $I_i = 0,05 \text{ A}$ ,  $P_i = 0,6 \text{ W}$ ,  $U_q = 48 \text{ V}$  for temperature class T6 and  
 $T_a \leq 45^\circ\text{C}$ ;
- output parameters of the external position transducer, terminals 3, 4, 5  
 $U_o = 6 \text{ V}$ ,  $I_o = 75 \text{ mA}$ ,  $P_o = 0,12 \text{ W}$ ,  $C_o = 2,5 \text{ }\mu\text{F}$ ,  $L_o = 0,7 \text{ mH}$

**[16] Test report:**

„Sprawozdanie z oceny ATEX” KDB Nr 17.043



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**SCHEDULE**  
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**[17] Special conditions for safe use:**

Not applicable

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

Met by compliance with standards listed below:

EN 60079-0:2012 + A11:2013; EN 60079-11:2012  
(PN-EN 60079-0:2013-03 + A11:2014-03; PN-EN 60079-11:2012)

**Document's history:**

- EU-Type Examination Certificate KDB 17ATEX0035 issue 1, **this document**, initial certification (issue 0).

