



EC-Type Examination Certificate

- (1)
(2) **Equipment or Protective Systems Intended for Use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

(3) EC-Type Examination Certificate Number:

FTZÚ 10 ATEX 0295X

- (4) Equipment or protective system: **Pressure transmitters type: PC-29A/XX/YY, PC-29B/XX/YY,
PC-29PA/YY, PC-29PB/YY.
Differential pressure transmitters type: PR-29A/XX/YY,
PR-29B/XX/YY**

(5) Manufacturer: **APLISENS S.A.**

(6) Address: **ul. Morelowa 7, 03-192 Warszawa, Poland**

(7) This equipment or protective system and any of acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) The Physical Technical Testing Institute, notified body number 1026 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, 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.

The examination and test results are recorded in confidential Report N°

10/0295 dated 30.03.2011

(9) Compliance with Essential Health and Safety Requirements has been assured by compliance with:


EN 60079-0:2009, EN 60079-11:2007, EN 60079-26:2007, EN 50303:2000

(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, examination and testing of the specified equipment or protective system in accordance to the directive 94/9/EC.


Further requirements of the Directive 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 following:

 **II 1/2G Ex ia IIC T6/T5 Ga/Gb** for PC-29B, PC-29PB, PR-29B
II 1/2G Ex ia IIB T6/T5 Ga/Gb for PC-29A, PC-29PA, PR-29A
I M1 Ex ia I Ma

This EC-Type Examination Certificate is valid till: **30.03.2016**

Responsible person:


Dipl. Ing. Sindler Jaroslav
Head of certification body



Date of issue: 30.03.2011

Page: 1/4

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Physical Technical Testing Institute
Ostrava-Radvanice

(13)

Schedule

(14) **EC-Type Examination Certificate N° FTZÚ 10 ATEX 0295X**

(15) Description of Equipment or Protective System:

Pressure transmitters PC-29A, PC-29B are designed to measure positive gauge pressure, vacuum pressure and absolute pressure of gases, vapours and liquids. The transmitters PC-29PA, PC-29PB are designed to measure of level of liquid. Differential pressure transmitters PR-29A, PR-29B are designed to measure liquid levels in closed tanks and to measure differential pressure across constructions. The active sensing element is a silicon diaphragm with in-diffused piezoresistors located in a sensing module. The electronic part amplifies and standardizes the signal from measuring bridge to the output voltage (three wires) signal. The electronic circuitry except of filter board is encapsulated in stainless steel enclosure. The external circuit connection facility differs according to the modes as follows:

- PD (angular connector produced by Hirschmann, and cable gland PG-11),
- PZ (terminal box with cable gland M20x1,5),
- PK (permanently connected cable).

The letters XX indicate type of process connector, YY indicate type of electric connector.

Intrinsically safe parameters:

Types: PC-29A, PC-29PA, PR-29A.

Supply terminals 1, 3:

$-40^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C}$: temp. class T5, $U_i = 14.1\text{ V}$, $I_i = 0.2\text{ A}$, $P_i = 0.7\text{ W}$, $C_i = 210\text{ nF}$, $L_i = 0.25\text{ mH}$;

$-40^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$: temp. class T6, $U_i = 14.1\text{ V}$, $I_i = 0.14\text{ A}$, $P_i = 0.7\text{ W}$, $C_i = 210\text{ nF}$, $L_i = 0.25\text{ mH}$.

Output terminals 2, 3:

$U_o = 14.1\text{ V}$, $I_o = 0.2\text{ A}$, $P_o = 0.7\text{ W}$, $C_o = 2.4\mu\text{F}$, $L_o = 3.5\text{ mH}$.

Types: PC-29B, PC-29PB, PR-29B.

Supply terminals 1, 3:

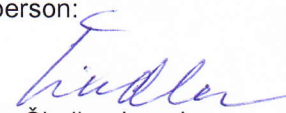
$-40^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C}$: temp. class T5, $U_i = 5.6\text{ V}$, $I_i = 0.2\text{ A}$, $P_i = 0.56\text{ W}$, $C_i = 7.5\mu\text{F}$, $L_i = 0.25\text{ mH}$;

$-40^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$: temp. class T6, $U_i = 5.6\text{ V}$, $I_i = 0.2\text{ A}$, $P_i = 0.56\text{ W}$, $C_i = 7.5\mu\text{F}$, $L_i = 0.25\text{ mH}$.

Output terminals 2, 3:

$U_o = 5.6\text{ V DC}$, $I_o = 0.2\text{ A}$, $P_o = 0.56\text{ W}$, $C_o = 40\mu\text{F}$, $L_o = 0.55\text{ mH}$.

Responsible person:


Dipl. Ing. Šindler Jaroslav
Head of certification body



Date of issue: 30.03.2011

Page: 2/4

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Physical Technical Testing Institute
Ostrava-Radvanice

(13)

Schedule

(14) **EC-Type Examination Certificate N° FTZÚ 10 ATEX 0295X**

(16) Report No.: 10/0295 dated 30.03.2011

(17) Special conditions for safe use:

17.1 Ambient temperature range: $-40^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$ for temperature class T5 and
 $-40^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$ for temperature class T6.

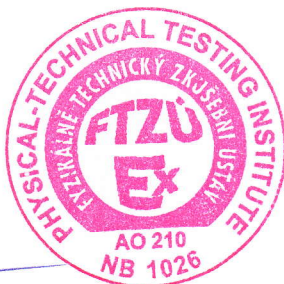
17.2 The equipment will not meet the 500V rms isolation test required by EN 60079-11:2007.
This must be taken into account when installing the equipment.

(18) Essential Health and Safety Requirements:

Essential health and safety requirement of Directive 94/9/EC are covered by the standard mentioned in (9), according which the product was verified and in the manufacturer's instruction for use.

Responsible person:

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Head of certification body



Date of issue: 30.03.2011

Page: 3/4

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(13)

Schedule

(14) **EC-Type Examination Certificate N° FTZÚ 10 ATEX 0295X**


(19) List of Documentation:

1. Technical documentation		10/2010
2. Drawings No.:		
	PC29-A000-20	10/2010
	PC29-A000-21 (2 sheets)	10/2010
	PC29-C021-TA (3 sheets)	10/2010
	PC29-C022-TA (3 sheets)	10/2010
	PC29-S021-TA (2 sheets)	09/2010
	PC29-B021-TA (7 sheets)	09/2010
	PC29-B027-01	10/2010
	PC29-B024-01	10/2010
	PC29-B023-01	10/2010
	PC29-B022-01	10/2010
	PC29-B026-01	10/2010
	PC29-B025-02 (2 sheets)	10/2010
	PC29-A021-TA (5 sheets)	10/2010
	PC29-A022-TA	09/2010
	PR29-A021-TA (4 sheets)	10/2010
	PR29-A022-TA	09/2010
	PC29P-A002-TA (5 sheets)	10/2010
	PC29-B012-02	12/2010
	PC29-B013-01	10/2010
	PC29-B014-01	10/2010
	ZG-002-TA	06/2007
	ZG-006-TA	10/2004
	GC1-007-TA (3 sheets)	01/2010
	GC3-001-TA (sheet No 1)	10/2009
	GC3-001-TA (sheets No 2, 3)	01/2010
	GC3-003-TA (2 sheets)	01/2010
	GC4-001-TA (3 sheets)	01/2010
	GC4-005-TA (3 sheets)	01/2010
	GR50-001-TA (2 sheets)	07/2010
	GR40-001-TA (2 sheets)	09/2010
	GSP-002-TA (2 sheets)	10/2008
3. Analysis of compliance with EN requirements No.:	AN.PC-29.03 (10 pages and 2 annexes)	
4. Instruction manual No.:	DTR.PC.PR-29.02	04/2010

The documentation was verified by FTZÚ dated 30.03.2011.

Responsible person:

Date of issue: 30.03.2011


Dipl. Ing. Sindler Jaroslav
Head of certification body

Page: 4/4



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(1) **Supplementary EU - Type Examination Certificate No.1**

(2) **Equipment or Protective Systems Intended for Use
in Potentially Explosive Atmospheres
(Directive 2014/34/EU)**

(3) EU - Type Examination Examination Certificate number:

FTZÚ 10 ATEX 0295X

(4) Product: **Pressure transmitter type PC-29A/XX/YY, PC-29B/XX/YY, PC-29PA/YY, PC-29PB/YY,
Differential pressure transmitter type PR-29A/XX/YY, PR-29B/XX/YY.**

(5) Manufacturer: **APLISENS S.A.**

(6) Address: **ul. Morelowa 7, 03-192 Warszawa, Poland**

(7) This supplementary certificate extends EC - Type Examination Certificate No. FTZÚ 10 ATEX 0295X to apply to products 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.

(8) The Physical-Technical Testing Institute, Notified Body number 1026, in accordance with Articles 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26.02.2014, certifies that this product, as modified by this supplementary certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

(9) In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20.04.2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20.04.2016.

(10) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012+A11:2013, EN 60079-11:2012, EN 50303:2000

(11) The marking of the product shall include the following:



I M1 Ex ia I Ma



II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb

for PC-29..., Pr-29...



II 1G Ex ia IIB T4/T5/T6 Ga

for SG-25A, SG-25B

(12) This certificate is valid till: **01.06.2021**

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 01.06.2016

Page: 1/4

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**Physical-Technical Testing Institute
Ostrava - Radvanice**

(13)

Schedule

(14) **Supplementary EU - Type Examination Certificate No. 1
to FTZÚ 10 ATEX 0295X**

(15) Description of the variation to the Product:

The subject of this supplementary certificate is:

- Modification of certified apparatus;
- Modification of apparatus marking;
- Adding new model (variant) – extension of series: SG-25A, SG-25B;
- Evaluation according to the newest standards;
- Prolongation of certificate validity.

This supplementary certificate accepts these changes of the Product:

- Added versions of transmitter and probe with the revised main PCB PC29-rev4, with the amended marking and input parameters.
- Added versions of pressure transmitter and differential pressure transmitter with electrical connections type: PKM, PKD, SG, SGM.
- Added new enclosure for transmitters with electrical connection PZ.
- Introduced a new types of hydrostatic level probe SG-25A and SG-25B.
- Transmitters with electrical connection PKD are allowed only to hazardous gas explosive atmospheres (Group II).
- Transmitters with a new electrical connection PKM, SG, SGM, PZ and a new types SG-25A and SG-25B are allowed to gas hazardous explosive atmospheres and mining (Group II and Group I).
- Added the ability to use layer of PTFE thickness max. 0.15mm covering the wetted surfaces of pressure separators.
- Added replacements of previously used: silicone sealant, power cable and electrical connector PD.
- Introduced version of transmitter allowed for hazardous explosive gas atmospheres with minimum ambient temperature $T_a \geq -50^\circ\text{C}$.
- Introduced minor other changes do not affect the intrinsic safety.

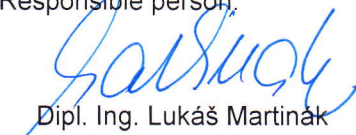
Ambient temperature:

$T_a = -40^\circ\text{C}$ to $+80^\circ\text{C}$

$T_a = -50^\circ\text{C}$ to $+80^\circ\text{C}$ - version only for explosive gas atmospheres (Group II)

Other technical parameters and construction of apparatus remain unchanged, intrinsically safe parameters changed.

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 01.06.2016

Page: 2/4



Physical-Technical Testing Institute
Ostrava - Radvanice

(13) **Schedule**

(14) **Supplementary EU - Type Examination Certificate No. 1
to FTZÚ 10 ATEX 0295X**

Intrinsically safe parameters:

Types: PC-29A, PC-29PA, PR-29A, SG-25A.

Supply terminals 1,3:

Linear power supply output characteristic:

$U_i=16V$, $I_i=0.2A$, $P_i=0.8W$, $L_i=10\mu H$, $C_i=10nF$ $-40^\circ C \leq T_a \leq 80^\circ C$ and T4,
 $-40^\circ C \leq T_a \leq 70^\circ C$ and T5,
 $-40^\circ C \leq T_a \leq 45^\circ C$ and T6

Trapezoidal and Rectangular power supply output characteristic:

$U_i=12V$, $I_i=0.05A$, $P_i=0.6W$, $L_i=10\mu H$, $C_i=10nF$ $-40^\circ C \leq T_a \leq 80^\circ C$ and T4,
 $-40^\circ C \leq T_a \leq 70^\circ C$ and T5,
 $-40^\circ C \leq T_a \leq 45^\circ C$ and T6

Output terminals 2, 3:

$U_o=U_i$, $I_o=I_i$, $P_o=P_i$, $L_o=0.55mH$, $C_o=0.3\mu F$

Types: PC-29B, PC-29PB, PR-29B, SG-25B.

Supply terminals 1,3:

$U_i=5.6V$, $I_i=0.2A$, $P_i=0.56W$, $C_i=10\mu F$, $L_i=10\mu H$ $-40^\circ C \leq T_a \leq 80^\circ C$ and T4,
 $-40^\circ C \leq T_a \leq 70^\circ C$ and T5,
 $-40^\circ C \leq T_a \leq 45^\circ C$ and T6

Output terminals 2, 3:

$U_o=U_i$, $I_o=I_i$, $P_o=P_i$, $L_o=0.55mH$, $C_o=40\mu F$

(16) Report Number.: 10/0295/1

(17) Specific Conditions of Use:

Edited against those listed previously.

1. Version of the transmitter with surge arrester, marked on the plate "SA", does not meet the requirements of Section 6.3.13 of EN 60079-11:2012 (test of isolation 500 VAC). This must be taken into account during the installation of transmitters.

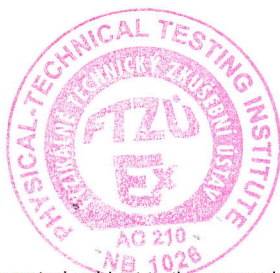
(18) Essential Health and Safety Requirements:

Compliance with the Essential Health and Safety Requirements is covered by standards mentioned in clause (10) of this supplementary certificate.

Responsible person:


Dipl. Ing. Lukáš Martinák

Head of Certification Body



Date of issue: 01.06.2016

Page: 3/4

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(13)

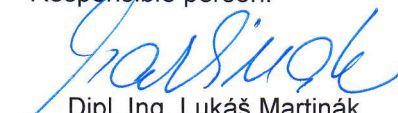
Schedule

(14) **Supplementary EU - Type Examination Certificate No. 1
to FTZÚ 10 ATEX 0295X**

(19) Drawings and Documents:

Number:	Sheet:	Date:
AN-PC29.03	1÷10	05.2014
Appendix Exi.ATEX to IO.PC.PR-29.03	1÷4	02.2016
PC29-A000-20	1A, 2	05.2014
PC29-A000-21	1A, 2A	05.2014
PC29-C021-TA	1A, 2A, 3A	05.2014
PC29-C022-TA	1A, 2A, 3A	05.2014
PC29-S029-TA	1, 2	05.2014
PC29-B029-TA	1÷8	05.2014
APC2000-B122-TA	1, 2	05.2014
PC29-A023-TA	1÷7	05.2014
PC29-A024-TA	1	05.2014
PR29-A023-TA	1÷5	05.2014
PR29-A024-TA	1	05.2014
PC29P-A023-TA	1÷6	05.2014
PC29G-023-TA	1, 2	05.2014
PC28-B017-01	1	08.2012
PC28-B018-01	1	08.2012
PC28-B019-01	1	08.2012
GC4-001-TA	1C, 2C, 3C	05.2012
GR40-003-TA	1D	09.2012
GC3-006-TA	1B, 2B	11.2012
GC4-006-TA	1, 2	08.2011

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 01.06.2016

Page: 4/4

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(1) **Supplementary EU - Type Examination Certificate No. 2**

(2) **Equipment or Protective Systems Intended for Use
in Potentially Explosive Atmospheres
(Directive 2014/34/EU)**

(3) EU - Type Examination Examination Certificate number:

FTZÚ 10 ATEX 0295X

(4) Product: **Pressure transmitter type PC-29A/XX/YY, PC-29B/XX/YY, PC-29PA/YY, PC-29PB/YY,
Differential pressure transmitter type PR-29A/XX/YY, PR-29B/XX/YY,
Hydrostatic Level Probe type SG-25A, SG-25B.**

(5) Manufacturer: **APLISENS S.A.**

(6) Address: **ul. Morelowa 7, 03-192 Warszawa, Poland**

(7) This supplementary certificate extends EC - Type Examination Certificate No. FTZÚ 10 ATEX 0295X to apply to products 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.

(8) The Physical-Technical Testing Institute, Notified Body number 1026, in accordance with Articles 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26.02.2014, certifies that this product, as modified by this supplementary certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

(9) In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20.04.2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20.04.2016.

(10) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018, EN 60079-11:2012, EN 50303:2000

(11) The marking of the product shall include the following:



I M1 Ex ia I Ma



II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb

for PC-29..., PR-29...



II 1G Ex ia IIB T4/T5/T6 Ga

for SG-25A, SG-25B

(12) This certificate is valid till: **30.11.2023**

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 20.11.2018

Page: 1/3

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**Physical-Technical Testing Institute
Ostrava - Radvanice**

(13)

Schedule

(14) **Supplementary EU - Type Examination Certificate No. 2
to FTZÚ 10 ATEX 0295X**

(15) Description of the variation to the Product:

The subject of this supplementary certificate is:

- Modification of certified apparatus;
- Adding new model (variant) – extension of series: PC-29S, PR-29S, PC-29PS;
- Evaluation according to the newest standards;
- Prolongation of certificate validity.

This supplementary certificate accepts these changes of the Product:

- Added versions of transmitter and probe with the revised main PCB PC29-rev4, version S, with minor changes in used components,
- Introduced new types of pressure transmitter PC-29S, differential pressure transmitter PR-29S and level probe PC-29PS,
- Minor changes in used seals,
- Introduced other minor changes do not affect the intrinsic safety,
- Updating existing documentation.

Technical and intrinsically safe parameters and construction of apparatus remain unchanged.

(16) Report Number.: 10/0295/2

(17) Specific Conditions of Use:

None additional to those listed previously.

(18) Essential Health and Safety Requirements:

Compliance with the Essential Health and Safety Requirements is covered by standards mentioned in clause (10) of this supplementary certificate.

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 20.11.2018

Page: 2/3

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Physical-Technical Testing Institute
Ostrava - Radvanice

Schedule

(13)

(14) **Supplementary EU - Type Examination Certificate No. 2
to FTZÚ 10 ATEX 0295X**

(19) Drawings and Documents:

Number:	Sheet:	Date:
IO.PC.PR-29.03	34	02.2017
PC29-A000-22	1	03.2017
PC29-A000-20	1B, 2A	03.2017
PC29-A000-21	1B, 2B	05.2014
PC29-C021-TA	1B, 2B, 3B	03.2017
PC29-S020-TA	1	03.2017
PC29-B020-TA	1, 2, 3, 4 5	03.2017
PC29-A023-TA	6A, 7A	03.2017
PR29-A023-TA	4A, 5A	03.2017
PC29P-A023-TA	5A, 6A	03.2017
(CER.Ex)SG25-A061-TA	1A	03.2017
ZA-002-TA	1C	05.2011
ZA-002-TA	2	12.2015

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 20.11.2018

Page: 3/3

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