



Physical Technical Testing Institute
Ostrava – Radvanice



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 13 ATEX 0205X

(4) Equipment or protective system: **Intelligent Temperature Transmitter type LI-24ALW**

(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°:

13/0205 dated 19.12.2013

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

EN 60079-0:2012; EN 60079-11:2012; 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 T4-T6 Ga/Gb



I M1 Ex ia I Ma

(version with enclosure ss316)

II 1D Ex ia IIIC T105°C Da

This EC-Type Examination Certificate is valid till: **20.12.2018**

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 20.12.2013

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FTZÚ, s.p., Pikartská 1337/7, 716 07 Ostrava-Radvanice, Czech Republic,
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Physical Technical Testing Institute
Ostrava – Radvanice

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(14) **EC-Type Examination Certificate N° FTZÚ 13 ATEX 0205**

(15) Description of Equipment or Protective System:

The Temperature Transmitter type LI-24ALW is designed to convert temperature signal into an electrical signal. The apparatus comprises several printed circuit boards and LCD, all housed in a metal enclosure which can be made of light alloy for group II applications but only of stainless steel for mine (group I) application. One of the housing cover contains a glass window if the transmitter is fitted with an optional display.

External connections are made via integral terminals and cable glands which must be of certified type if they are mounted on the version for combustible dust hazard application.

The transmitters intended as group II 1/2G equipment shall be installed into the partition between the hazardous areas of category 1G and 2G.

Temperature classes T4, T5 or T6 depend on the input power and maximum ambient temperature – see below.

Input parameters:

- a) supply from a power source with linear output characteristic:
 $U_i = 30 \text{ V}$; $I_i = 0,1 \text{ A}$; $C_i = 2,5 \text{ nF}$; $L_i = 18 \text{ } \mu\text{H}$; $P_i = 0,75 \text{ W}$; $T_a = 80^\circ\text{C}$ & T4; $T_a = 70^\circ\text{C}$ & T5;
 $P_i = 0,5 \text{ W}$; $T_a = 45^\circ\text{C}$ & T6, $T_m > 80^\circ\text{C}$ & T* according to DTR.LI24.ALW.01
- b) supply from a power source with trapezoidal output characteristic:
 $U_i = 24 \text{ V}$; $U_Q = 48 \text{ V}$; $I_i = 50 \text{ mA}$; $C_i = 2,5 \text{ nF}$; $L_i = 18 \text{ } \mu\text{H}$; $P_i = 0,6 \text{ W}$; $T_a = 80^\circ\text{C}$ & T5
 $P_i = 0,5 \text{ W}$; $T_a = 45^\circ\text{C}$ & T6, $T_m > 80^\circ\text{C}$ & T* according to DTR.LI24.ALW.01
- c) supply from a power source with rectangular output characteristic:
 $U_i = 24 \text{ V}$; $I_i = 25 \text{ mA}$; $C_i = 2,5 \text{ nF}$; $L_i = 18 \text{ } \mu\text{H}$; $P_i = 0,6 \text{ W}$ $T_a = 80^\circ\text{C}$ & T5,
 $T_m > 80^\circ\text{C}$ & T* according to DTR.LI24.ALW.01

T_m - medium temperature

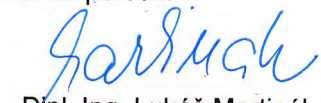
Output parameters:

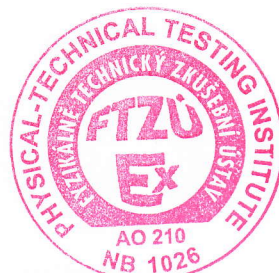
$U_o = 6,6 \text{ V}$; $I_o = 9,8 \text{ mA}$; $P_o = 14,5 \text{ mW}$; $L_o = 400 \text{ mH}$
 $C_o = 1000 \text{ } \mu\text{F}$ for IIA; $C_o = 480 \text{ } \mu\text{F}$ for IIB; $C_o = 3,5 \text{ } \mu\text{F}$ for IIC

Degree of protection: IP 65, IP 66/67

Minimum ambient temperature: $T_a \text{ min} = -40^\circ\text{C}$

Responsible person:


Dipl. Ing. Lukáš Martinák
Head of Certification Body



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(14) **EC-Type Examination Certificate N° FTZÚ 13 ATEX 0205**

(16) Report No.: 13/0205

(17) Special conditions for safe use:

- 17.1 The operating instructions must be taken into account during installation.
- 17.2 The ambient temperature range is reduced to $T_a = -20^{\circ}\text{C}$ to $+60^{\circ}\text{C}$ if the device is installed as group I M1 equipment.
- 17.3 Version of device with surge arrester does not meet the 500V rms test required by EN 60079-11:2012. This must be taken into account when installing the device.
- 17.4 For the medium temperature $T_m > 80^{\circ}\text{C}$ temperature class T * and the maximum surface temperature T * should be set according to the current manual.

(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.

(19) List of Documentation:

<i>Document/Drawings:</i>	<i>Date:</i>	<i>Nr. of Pages:</i>
LI24ALW-A000-00	09.2013	2
LI24ALW-A000-01	09.2013	4
LI24ALW-C001-TA	09.2013	4
LI24ALW-S001-01	09.2013	1
APT2000-S001-01	05.2009	1
LI24ALW-S003-01	09.2013	1
LI24ALW-B001-TA	09.2013	2
APC2000-B612-04	05.2009	8
LI24ALW-B003-01	09.2013	2
APC2000-B617-01	01.2010	1
APC2000-B623-00	12.2007	1
APC2000-B624-00	03.2011	1
LI24ALW-A001-TA	08.2013	4
LI24ALW-B004-TA	08.2013	1
LI24ALW-B005-TA	08.2013	1
LI24ALW-B006-01	08.2013	1
APC2000-B622-00	12.2007	1
APC2000-C612-00	12.2007	1

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(14) **EC-Type Examination Certificate N° FTZÚ 13 ATEX 0205**

(19) List of Documentation:

<i>Document/Drawings:</i>	<i>Date:</i>	<i>Nr. of Pages:</i>
ZA-065-TA	06.2013	1
ZA-068-TA	07.2012	1
A-380-00	09.2013	1
LI24ALW-C003-01	09.2013	1
LI24ALW-C004-01	09.2013	1
APC2000-B629-TA	02.2013	1
CTO-B184-TA	09.2013	1
CTO-B181-TA	08.2013	1
CTO-B186-TA	08.2013	1
CTO-B176-TA	07.2013	1
CTO-B180-TA	07.2013	1
CTA-C136-01	07.2013	1
CTA-C147-01	07.2013	1
CTA-C142-01	09.2013	1
CTO-C211-01	07.2013	1
CTO-B175-TA	07.2013	1
CTA-C144-01	08.2013	1
CTA-C148-01	09.2013	1
CTO-B183-TA	09.2013	1
CTA-C143-01	08.2013	1
CTA-C146-01	09.2013	1
CTO-C212-01	07.2013	1
CTO-B174-TA	07.2013	1
CTO-B173-TA	07.2013	1
CTO-B172-TA	07.2013	1
CTA-C137-01	07.2013	1
CTA-C138-01	07.2013	1
A-379-00	08.2013	1
CTA-C149-01	09.2013	1
CTH-C008-01	08.2013	1
AN.LI-24ALW.Ex.01	09.2013	17
DTR.LI.ALW.01	10.2013	40
ZA-065-TA	06.2013	1
ZA-068-TA	07.2012	1

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 20.12.2013

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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 Certificate number:

FTZÚ 13 ATEX 0205X

(4) Product: **Smart Temperature Transmitter type LI-24ALW**

(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 13 ATEX 0205X 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:

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

only version LI-24ALW/C



II 2(1)G Ex ia [ia Ga] IIC T4/T5/T6 Gb

only version LI-24ALW

I M1 Ex ia I Ma

version with enclosure ss316

II 1D Ex ia IIIC T105°C Da

(12) This certificate is valid till: **13.07.2022**

Responsible person:

Dipl. Ing. Lukáš Martinák
Head of Certification Body



Date of issue: 13.07.2017

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Physical-Technical Testing Institute
Ostrava - Radvanice

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Schedule

(14) **Supplementary EU - Type Examination Certificate No. 1
to FTZÚ 13 ATEX 0205X**

(15) Description of the variation to the Product:

The subject of this supplementary certificate is:

- Modification of certified apparatus;
- Modification of product parameters;
- Modification of apparatus marking;
- Renaming current types LI-24ALW to LI-24ALW/C – Transmitter with integral sensor;
- Adding new model (variant) – LI-24ALW – Transmitter without integral sensor;
- Evaluation according to the newest standards;
- Prolongation of certificate validity.

This supplementary certificate accepts these changes of the Product:

Changes in numbering of documentation.

Current models are renamed to LI-24ALW/C – Smart Temperature Transmitter with integral sensor.

Introduced new type of product – Smart Temperature Transmitter type LI-24ALW identical with LI-24ALW/C, designed to be connected with external sensor.

Added new version of main PCB MPC5-rev.2.1.

Introduced version of transmitter allowed for hazardous explosive gas atmospheres with minimum ambient temperature $T_a = -50^\circ\text{C}$.

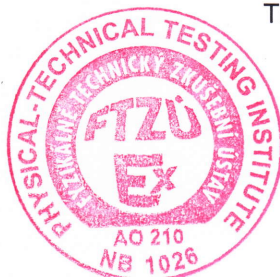
There are minor change in used electrical components and mechanical parts.

Input parameters:

- a) supply from a power source with linear output characteristic:
 $U_i = 30\text{ V}$; $I_i = 0,1\text{ A}$; $C_i = 2,5\text{ nF}$; $L_i = 18\text{ }\mu\text{H}$; $P_i = 0,75\text{ W}$; $T_a \leq 80^\circ\text{C}$ & T4; $T_a \leq 70^\circ\text{C}$ & T5;
 $P_i = 0,5\text{ W}$; $T_a \leq 40^\circ\text{C}$ & T6;
 $T_m > T_a^\circ\text{C}$ & T*, T** according to IO.LI24.ALW.01
- b) supply from a power source with trapezoidal output characteristic:
 $U_i = 24\text{ V}$; $U_Q = 48\text{ V}$; $I_i = 50\text{ mA}$; $C_i = 2,5\text{ nF}$; $L_i = 18\text{ }\mu\text{H}$; $P_i = 0,6\text{ W}$; $T_a \leq 80^\circ\text{C}$ & T5;
 $P_i = 0,5\text{ W}$; $T_a \leq 40^\circ\text{C}$ & T6;
 $T_m > T_a^\circ\text{C}$ & T*, T** according to IO.LI24.ALW.01

Responsible person:


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c) supply from a power source with rectangular output characteristic:

$U_i = 24 \text{ V}$; $I_i = 25 \text{ mA}$; $P_i = 0,6 \text{ W}$; $C_i = 2,5 \text{ nF}$; $L_i = 18 \text{ }\mu\text{H}$; $T_a \leq 80^\circ\text{C}$ & T_5 ,

$T_m > T_a^\circ\text{C}$ & T^* , T^{**} according to IO.LI24.ALW.01

T_m - medium temperature

T^* - maximum surface temperature

T^{**} - temperature class

Output parameters:

$U_o = 6.6 \text{ V}$; $I_o = 9,8 \text{ mA}$; $P_o = 16,2 \text{ mW}$; $L_o = 400 \text{ mH}$

$C_o = 1000 \text{ }\mu\text{F}$ for IIA; $C_o = 480 \text{ }\mu\text{F}$ for IIB; $C_o = 3,5 \text{ }\mu\text{F}$ for IIC

Degree of protection: IP 65, IP 66/67

Minimum of 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)

(16) Report Number.: 13/0205/1

(17) Specific Conditions of Use:

Modified to those listed previously.

1. The operating instructions must be taken into account during installation.
2. Versions of transmitter with surge arrester marked on plate "SA", do not meet the requirements of Section 10.3 of the standard EN 60079-11:2012 (500Vrms). This must be taken into account when installing the equipment.
3. Under certain extreme circumstances in dust explosive atmospheres, the device with painting of aluminum enclosure and with plastic tables may store an ignition-capable level of electrostatic charge. The device shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge.
4. For the medium temperature $T_m > T_a$ temperature class T^{**} and the maximum surface temperature T^* should be set according to the current manual.

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(14) **Supplementary EU - Type Examination Certificate No. 1
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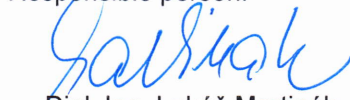
(18) Essential Health and Safety Requirements:

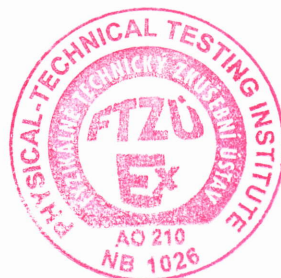
Compliance with the Essential Health and Safety Requirements is covered by standards mentioned in clause (10) of this supplementary certificate.

(19) Drawings and Documents:

Title / Drawing No.:	Sheet:	Date:	Nr. of Pages:
(CER.Exi) LI24ALW-A000-00	1, 2	02.2017	2
(CER.Exi) LI24ALW-A000-01	1, 2, 3, 4	02.2017	4
(CER.Exi) LI24ALW-A000-02	1	02.2017	1
(CER.Exi) LI24ALW-C001-TA	1, 2, 3	02.2017	3
(CER.Ex) APC2000-S654-01	1	02.2017	1
(CER.Ex) APC2000-B654-TA	1..9	02.2017	9
(CER.Exi) LI24ALW-A001-TA	1, 2, 3, 4	02.2017	4
APC2000-B606-01	1	03.2014	1
(CER.Ex)APC2000-B655-TA	1	02.2017	1
(CER.XX) LI24ALW-B017-TA	1, 2	02.2017	2
ZA-083-TA	1	11.2016	1
MCK/A-379-03	1	08.2014	1
U1.AN.LI24ALW.Ex.01	1..6	02.2017	6 + 1 annex
IO.LI24.ALW.01	1..49	02.2017	49

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