



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX JSH 22.0004X** Page 1 of 3 [Certificate history:](#)
Status: **Current** Issue No: 0
Date of Issue: **2023-04-26**
Applicant: **APLISENS S. A.**
ul. Morelowa 7, 03-192 Warszawa
Poland
Equipment: **Smart, modular differential pressure transmitter APM-2**
Optional accessory:
Type of Protection: **Flameproof enclosures "db", intrinsic safety "ia", dust ignition protection "ta"**
Marking: **Ex ia IIC T5/T4/T3 Ga/Gb**
Ex ia IIIC T100°C/ T135°C/ T155°C Da
or
Ex db ia IIC T5/T4/T3 Ga/Gb
Ex ia ta IIIC T100°C/ T135°C/ T155°C Da

Approved for issue on behalf of the IECEx
Certification Body:

Damian Wróbel

Position:

Head of ExCB

Signature:
(for printed version)

Date:
(for printed version)

26.04.2023

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

J.S. Hamilton Poland Sp. z o.o
Wyzwolenia 14
Siemianowice Śląskie 41-103
Poland

 **HAMILTON**



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Date of issue: **2023-04-26** Issue No: 0

Manufacturer: **APLISENS S. A.**
ul. Morelowa 7, 03-192 Warszawa
Poland

Manufacturing locations: **APLISENS S. A.**
ul. Morelowa 7, 03-192 Warszawa
Poland

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-31:2022-01 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
Edition:3.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[PL/JSH/ExTR22.0004/00](#)

Quality Assessment Report:

[PL/KDB/QAR12.0001/05](#)



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Certificate No.: **IECEX JSH 22.0004X**

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Date of issue: 2023-04-26

Issue No: 0

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Smart, modular differential pressure transmitter APM-2 is designed for hydrostatic measurement of liquid level in closed pressure vessels, density and phase boundary.

The transmitter consists of the APM-2 central unit and two pressure transmitters PC1 and PC2. The transmitters and the central unit are connected with each other by Modbus transmission cable. The smart, modular differential pressure transmitter is made in two versions, a flameproof (Ex d) and dustproof (Ex t) version with intrinsically safe transmitters and a fully intrinsically safe (Ex i) version. The pressure transmitter PC1 and PC2 can have with different process connections, depending on the medium that is used in the process. The central unit is equipped with a display and buttons (accessible after unscrewing the side cover) for the configuration of the transmitter. The central unit has an enclosure made of high-pressure die-cast aluminium alloy or stainless steel. The enclosure has two cable entries via a cable gland with 1/2 NPT thread or M20x1.5 depending on the version. In the flameproof Ex d and dustproof Ex t versions of the transmitter, a blanking plug produced by Apisens S.A. is mounted in one unused hole of the enclosure.

Technical characteristics:

Standard range of measured pressures	0kPa + 100kPa
Ingress protection	IP66 / IP67
Output signals	4 + 20 mA (in a two-line system + HART)

SPECIFIC CONDITIONS OF USE: YES as shown below:

- In explosion hazardous areas, transmitters in varnished aluminum enclosures, as well as transmitters equipped with plastic plates and with parts of diaphragm separators covered with a PTFE layer, should be installed in a way that prevents electrostatic charging, in accordance with the operating instructions.
- The version of the transmitter with a surge arrester marked on the rating plate as "SA" does not meet the requirements of point 10.3 of IEC 60079-11:2011 (500Vrms). This must be taken into account when installing the device.
- A diaphragm separator containing titanium elements must be protected against mechanical impacts.
- The circuit after the galvanic separation in the central unit does not meet the requirements of clause 6.3.6 of IEC 60079-11:2011 regarding solid insulation to the enclosure. Potential equalization should be applied between the converter's central unit and PC1 and PC2 transmitters.
- The power supply of the transmitters should comply with the overvoltage category II (or better) in accordance with IEC 60664-1:2020 standard.
- Flameproof joints are not intended to be repaired.

Annex:

[IECEX JSH 22.0004 Attachment.pdf](#)



IECEX JSH 22.0004X Attachment

Smart, modular differential pressure transmitter APM-2 is designed for hydrostatic measurement of liquid level in closed pressure vessels, density and phase boundary. The transmitter consists of the APM-2 central unit and two pressure transmitters PC1 and PC2. The transmitters and the central unit are connected with each other by Modbus transmission cable. The smart, modular differential pressure transmitter is made in two versions, a flameproof (Ex d) and dustproof (Ex t) version with intrinsically safe transmitters and a fully intrinsically safe (Ex i) version. The pressure transmitter PC1 and PC2 can have with different process connections, depending on the medium that is used in the process. The central unit is equipped with a display and buttons (accessible after unscrewing the side cover) for the configuration of the transmitter. The central unit has an enclosure made of high-pressure die-cast aluminium alloy or stainless steel. The enclosure has two cable entries via a cable gland with 1/2 NPT thread or M20x1.5 depending on the version. In the flameproof Ex d and dustproof Ex t versions of the transmitter, a blanking plug produced by Aplisens S.A. is mounted in one unused hole of the enclosure.

Marking:

Ex ia IIC T5/T4/T3 Ga/Gb

Ex ia IIIC T100°C/T135°C/T155°C Da

or

Ex db ia IIC T5/T4/T3 Ga/Gb

Ex ia ta IIIC T100°C/T135°C/T155°C Da

Technical characteristics:

Standard range of measured pressures	0kPa + 100kPa
Ingress protection	IP66 / IP67
Output signals	4 + 20 mA (in a two-line system + HART)

Transmitter Ex db and Ex ta versions:

Power supply voltage U max = 36 V DC

Temperature class and maximum surface temperature for Ex d and Ex t versions:

Ambient temperature Ta:	Maximum temperature of the measured medium Tm:	Temperature class	The maximum surface temperature of the transmitter
-40°C + 75°C	90°C	T5	T100°C
	125°C	T4	T135°C
	150°C	T3	T155°C

Ex ia transmitter version:

Power supply from a source with a linear characteristic:

Maximum input voltage	Ui = 30V
Maximum input current	Ii = 100 mA
Maximum input power	Pi = 0,75 W
Maximum internal capacity	Ci = 7,5 nF
Maximum internal inductance	Li = 18 µH

Power supply from a source with a trapezoidal characteristic:

Maximum input voltage	$U_i = 24V$
Maximum input current	$I_i = 50 \text{ mA}$
Maximum input power	$P_i = 0,6 \text{ W}$
Maximum internal capacity	$C_i = 7,5 \text{ nF}$
Maximum internal inductance	$L_i = 18 \text{ }\mu\text{H}$

Power supply from a source with a rectangular characteristic:

Maximum input voltage	$U_i = 24V$
Maximum input current	$I_i = 25 \text{ mA}$
Maximum input power	$P_i = 0,6 \text{ W}$
Maximum internal capacity	$C_i = 7,5 \text{ nF}$
Maximum internal inductance	$L_i = 18 \text{ }\mu\text{H}$

or

Maximum input voltage	$U_i = 24V$
Maximum input current	$I_i = 50 \text{ mA}$
Maximum input power	$P_i = 1,2 \text{ W}$
Maximum internal capacity	$C_i = 7,5 \text{ nF}$
Maximum internal inductance	$L_i = 18 \text{ }\mu\text{H}$

Temperature class for Ex i version:

Ambient temperature T_a :	Maximum temperature of the measured medium T_m :	Temperature class	The maximum surface temperature of the transmitter
$-40^\circ\text{C} + 60^\circ\text{C}$	90°C	T5	100°C
$-40^\circ\text{C} + 80^\circ\text{C}$	125°C	T4	135°C
	150°C	T3	155°C