



AC 149



EU-TYPE EXAMINATION CERTIFICATE

- (1)
- (2) Equipment or Protective System Intended for use in Potentially Explosive Atmospheres
Directive 2014/34/EU
- (3) EU-Type Examination Certificate Number: **JSHP 22 ATEX 0051X** *issue 0*
- (4) Product: **Smart, modular differential pressure transmitter APM-2**
- (5) Manufacturer: **APLISENS S.A.**
- (6) Address: **03-192 Warszawa, ul. Morelowa 7, Poland**
- (7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- (8) J.S. Hamilton Poland Sp. z o.o., Notified Body no. 2057, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product 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.
The examination and test results are recorded in confidential Report No. JSHP/RW/22/22/RM.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- | | | | |
|---|---|--|---|
| EN IEC 60079-0:2018
(PN-EN IEC 60079-0:2018-09) | EN 60079-1:2014
(PN-EN 60079-1:2014-12) | EN 60079-11:2012
(PN-EN 60079-11:2012) | EN 60079-31:2014
(PN-EN 60079-31:2014-10) |
|---|---|--|---|
- (10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the specific conditions of use specified in the schedule to this certificate.
- (11) This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
This certificate is valid in its entirety, schedule(s) included.
- (12) The marking of the product shall include the following:



II 1/2G Ex ia IIC T5/T4/T3 Ga/Gb
II 1D Ex ia IIIC T100°C/T135°C/T155°C Da

or



II 1/2G Ex db ia IIC T5/T4/T3 Ga/Gb
II 1D Ex ia ta IIIC T100°C/T135°C/T155°C Da



Damian Wóbel
Kierownik
Jednostki certyfikującej



HAMILTON

Siemianowice Śl., 11th October 2022



AC 149

J.S. Hamilton Poland Sp. z o.o.

Notified Body No. 2057

ul. Wyzwolenia 14

41-103 Siemianowice Śląskie



(13)

SCHEDULE

(14)

CERTIFICATE No. JSHP 22 ATEX 0051X

(15)

Description of product:

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.

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
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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



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**HAMILTON**Siemianowice Śl., 11th October 2022

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P-9.1.1/F5.8E z dnia 24.01.2022 r.

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ul. Wyzwolenia 14
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CERTIFICATE No. JSHP 22 ATEX 0051X**Ex ia transmitter version:**

Power supply from a source with a linear characteristic:

Maximum input voltage	$U_i = 30V$
Maximum input current	$I_i = 100 \text{ mA}$
Maximum input power	$P_i = 0,75 \text{ W}$
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 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:

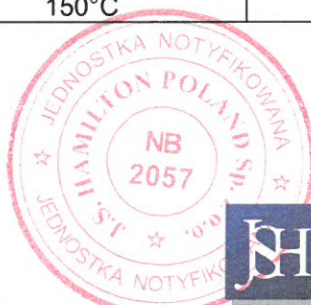
Maximum input voltage	$U_i = 24V$
Maximum input current	$I_i = 25 \text{ mA}$
Maximum input power	$P_i = 0,6 \text{ W}$
Maximum internal capacity	$C_i = 7,5 \text{ nF}$
Maximum internal inductance	$L_i = 18 \text{ }\mu\text{H}$

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
$-40^\circ\text{C} \div 60^\circ\text{C}$	90°C	T5	100°C
$-40^\circ\text{C} \div 80^\circ\text{C}$	125°C	T4	135°C
	150°C	T3	155°C

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CERTIFICATE No. JSHP 22 ATEX 0051X

(16)

Report number:

– JSHP/RW/22/22/RM

– The measured reference pressure is: chamber K1 – 4.75 bar,
chamber K2 – 3.64 bar.

(17)

Specific conditions of use:

- 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 EN 60079-11:2012 (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 EN 60079-11:2012 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 EN 60664-1 standard.
- Flameproof joints are not intended to be repaired.

(18)

Essential Health and Safety Requirements:

These requirements (EHSRs) are covered by the standards listed at item 9.

(19)

Drawings and documents:

- Technical documentation Smart, modular differential pressure transmitter APM-2. Exi, SIL versions. Warsaw, February 2022. C_DT.APM-2.Exi.01.
- Technical documentation Smart, modular differential pressure transmitter APM-2. Exd, SIL versions. Warsaw, February 2022. C_DT.APM-2.Exd.01.
- Explosion-proof device manual Smart, modular differential pressure transmitter APM-2. EN.IX.APM2. September 2022. Edition 01.A.001.

Detailed list of documents required for certified type identification is included in Report mentioned in Clause (16).

(20)

Document history:

- EU type examination certificate No. JSHP 22 ATEX 0051X of 11.10.2022 - issue 0



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HAMILTON

Siemianowice Śl., 11th October 2022