

EU-Type Examination Certificate



1. **EU-TYPE EXAMINATION CERTIFICATE**
2. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU**
3. **EU-Type Examination Certificate Number: ITS13ATEX27779 Issue 2**
4. **Product:** 1901-Z1 Wireless Access Point
5. **Manufacturer:** HMI Elements Ltd
6. **Address:** Unit A & B, Windmill Industrial Estate
Showfield Lane, Malton
North Yorkshire, YO17 6BT
United Kingdom
7. This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
8. Intertek Testing and Certification Limited, Notified Body number 0359 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council dated 26 February 2014, certifies that the 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.

In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificate referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 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 April 2016.

The examination and test results are recorded in confidential Intertek Reports Ref 100992401 dated May 2014, G100992401B dated July 2014 and G103437311 dated March 2018.
9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0: 2012, EN 60079-7: 2007, EN 60079-11: 2012, EN 60079-18: 2009 and EN 60079-31:2009 except in respect of those requirements referred to at item 16 of the Schedule.
10. If the sign "X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Safe 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.
12. The marking of the product shall include the following:



II 2(2) G D

Ex e ib [ib Gb] mb IIB T4 Gb
Ex ib tb [ib Db] IIIB T135°C Db IP66
-40°C ≤ Ta ≤ 60°C

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A M Smart
Certification Officer
16 April 2018



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13. Description of Equipment or Protective System

The 1901-Z1 Wireless Access Point is a radio network device designed to operate in explosive atmosphere where explosive gas and dust are present. It is designed for level of protection Gb. The equipment is made of subsystems which are, the power supply unit, Zener barrier, Ethernet barrier, Wi-Fi module, Antenna barrier and the LED driver assembly unit. The equipment utilizes different types of protection concept which are listed below.

- Equipment protection by Increased safety 'e':- for enclosure and terminals
- Equipment protection by encapsulation 'm':- for the power supply unit, Zener barrier, Wi-Fi module, LED driver assembly, Antenna barrier and the Ethernet barrier.
- Equipment dust ignition protection by enclosure 't':- for the enclosure.
- Equipment protection by intrinsic safety 'I':- for the RF output, Ethernet output and limiting energy in the exposed LEDs to hazardous atmosphere.

Intrinsic safety is assured by limitation of voltage, current and power, encapsulation, limitation of capacitance and inductance, infallible segregation and use of casting compound to exclude explosive gas atmosphere from the all components in the equipment. Encapsulation is assured by using of casting compound on all the circuits in equipment and use of thermal fuses in the power supply unit.

The Wireless Access Point enclosure provides a degree of protection of at least IP66.

The 1901-Z1 Wireless Access Point is a radio network has the following Intrinsically safe output and input parameters:

RF Output
 $U_o = 6.51V$
 $I_o = 1.031A$ at 2.4GHz
 $P_o = 1.7W$
 $C_o = 500\mu F$
 $L_o = 133\mu H$
 $L_o/R_o = 56.4 \mu H/\Omega$
 $C_i = 0$
 $L_i = 0$

Ethernet barrier
 $U_o = 4.935V$
 $I_o = 1.176A$
 $P_o = 1.451W$
 $C_o = 999\mu F$
 $L_o = 12.8 \mu H$
 $L_o/R_o = 31 \mu H/\Omega$
 $U_i = 5.88Vdc$
 $I_i = 1.666A$ dc
 $C_i = 908nF$
 $L_i = 0$

14. Report Number

Intertek Report Ref 100992401 dated May 2014,
Intertek Report Ref G100992401B dated July 2014,
Intertek Report Ref G103437311 dated March 2018.



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15. Special Conditions of Certification

(a). Specific Conditions of Safe Use

- None

(b). Conditions of Manufacture -

- A dielectric strength test shall be carried out between the mains terminals and body (Earth) of enclosure at 1520 V r.m.s or 2128 Vd.c for 60s. Alternatively, the test shall be carried out at 1800 V r.m.s or 2520Vd.c, but shall be maintained for at least 100 ms.
- A dielectric strength test shall be carried out on the isolated circuit (low voltage circuit) at 500 V r.m.s or 700Vd.c for 60 seconds. Alternatively, the test shall be carried out at 600 V r.m.s or 840Vd.c, but shall be maintained for at least 100 ms.

16. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report Ref 100992401 dated May 2014,

17. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
GA & Parts List for iSiS 1901 Zone 1 Wireless Access Point (5 pages)	D100078	A0	04/04/2014
*IS959 Wireless Access point Instrument Enclosure label	D100092	B1	11/04/2018
Construction of the Zone 1 WAP PSU Assembly SA392	D100158	A0	04/04/2014
PSU Schematics	SA392	C	18/02/2014
Machined Rose Ex Enclosure with Hinges – Ethernet Bulkhead Gland	D500794	C0	26/03/2014
Construction of LED Driver Assembly SA447	D100086	A	02/05/2013
Construction of WAP Zener Barrier Assembly SA462	D100083	A	02/05/2013
Construction of WAP IS Ethernet barrier Assembly SA462	D100084	A	02/05/2013
Construction of Wi-Fi Antenna Barrier (IS752)	D100104	A0	12/05/2014
Construction of Acksys WLg Link Wi-Fi Unit Assembly SA462	D100085	A0	04/04/2014
IS752 Wi-Fi Antenna Barrier Circuit Diagram	D500004	B	01/10/2012
WAP Zener barrier circuit diagram	IS943CCT	A	12/06/12
WAP Zener barrier part list	SA462	A	13/02/2013
Wi-Fi Antenna Barrier	IS752	A	28/01/2013
IS752 Wi-Fi Antenna Barrier	IS752SUB	A	28/01/2013
WAP Fuse Board	SA348	A	14/02/2013
Terminal Block Guard	D500864	A0	04/04/2014
LED driver Assembly Rev C - Schematic	SA447C	C	27/03/2013
Rose Ex d Enclosure Label Fixing Instructions	D100163	A0	12/05/2014

Note: An * is included before the title of documents that are new or revised.



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18. Details of Certificate changes Issue 1

Correction of the output entity parameters for the Ethernet barrier from $U_o = 4.515V$, $I_o = 1.231A$, $P_o = 1.390W$, $L_o = 13.4\mu H$, $L_o/R_o = 51 \mu H/\Omega$ to $U_o = 4.935V$, $I_o = 1.176A$, $P_o = 1.451W$, $L_o = 12.8 \mu H$, $L_o/R_o = 31 \mu H/\Omega$.
Changes to the instruction manual to reflect the above changes.

Title:	Drawing No.:	Rev Level:	Date:
No Schedule Drawings Revised.			

19. Details of Certificate changes Issue 2

Change of company name from iSiS-Ex Limited to HMI Elements Ltd
Revision of equipment model number, from iSiS 1901 to 1901-Z1 Wireless Access Point
Correction to marking from Ex tb IIIB T135°C Db to Ex ib tb [ib Gb] IIIB T135°C Db IP66

Title:	Drawing No.:	Rev Level:	Date:
IS959 Wireless Access point Instrument Enclosure label	D100092	B1	11/04/2018

This Certificate is the property of Intertek Testing and Certification Ltd and is subject to Intertek Testing and Certification's Conditions for Granting Certification

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