IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx ITS 13.0017

Issue No: 2

Certificate history:
Issue No. 2 (2018-04-27)
Issue No. 1 (2014-07-25)
Issue No. 0 (2014-06-09)

Status: **Current**

Date of Issue: **2018-04-27**

Applicant: **HMI Elements Ltd**
Unit A & B, Windmill Industrial Estate,
Showfield Lane, Malton
North Yorkshire
YO17 6BT
UNITED KINGDOM
United Kingdom

Equipment: **1901-Z1 Wireless Access Point**

Optional accessory:

Type of Protection: **e, ib, mb, tb,**

Marking:

Ex e ib [ib Gb] mb IIB T4 Gb

Ex ib tb [ib Db] IIIB T135°C Db IP66

-40°C ≤ Ta ≤ 60°C

Approved for issue on behalf of the IECEx Certification Body: A M Smart

Position: Certtifcation Officer

Signature:
(for printed version)

Date: 2018/04/27

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 the Official IECEx Website.

Certificate issued by:

Intertek Testing & Certification Limited
ITS House, Cleeve Road,
Leatherhead,
Surrey, KT22 7SA
United Kingdom

IECEx Certificate of Conformity

Certificate No: IECEx ITS 13.0017 Issue No: 2

Date of Issue: **2018-04-27** Page 2 of 6

Manufacturer: **HMI Elements Ltd**
Unit A & B,
Windmill Industrial Estate,
Showfield Lane, Malton
North Yorkshire
YO17 6BT
UNITED KINGDOM
United Kingdom

Additional Manufacturing location(s):

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 apparatus 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 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition:6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-18 : 2009 Edition:3	Explosive atmospheres Part 18: Equipment protection by encapsulation "m"
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2006-07 Edition:4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical 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:

GB/ITS/ExTR13.0052/00 GB/ITS/ExTR13.0052/01 GB/ITS/ExTR13.0052/02

Quality Assessment Report:

NO/DNV/QAR09.0001/06

IECEx Certificate of Conformity

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

General product information:

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	Ethernet barrier
Uo = 6.51V	Uo = 4.935V
Io = 1.031A at 2.4GHz	Io = 1.176A
Po = 1.7W	Po = 1.451W
Co = 500µF	Co = 999uF
Lo = 133µH	Lo = 12.8µH
Lo/Ro = 56.4 µH/Ω	Lo/Ro = 31 µH/Ω
Ci = 0	Ui = 5.88Vdc
Li = 0	Ii = 1.666A dc

Certificate No: IECEx ITS 13.0017 Issue No: 2

Date of Issue: **2018-04-27** Page 4 of 6

Ci = 908nF

Li = 0

SPECIFIC CONDITIONS OF USE: NO

IECEx Certificate of Conformity

Certificate No: IECEx ITS 13.0017 Issue No: 2

Date of Issue: **2018-04-27** Page 5 of 6

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

ISSUE 1 Intertek Report Ref G100992401B, dated July 2014.

1. Correction of the output entity parameters for the Ethernet barrier from Uo = 4.515V, Io = 1.231A, Po = 1.390W, Lo = 13.4µH, Lo/Ro = 51 µH/Ω to Uo = 4.935V, Io = 1.176A, Po = 1.451W, Lo = 12.8 µH, Lo/Ro = 31 µH/Ω.
2. Changes to the instruction manual to reflect the above changes.

Issue 2 Intertek Report Ref G103437311, dated 19 March 2018.

1. Change of company name from iSiS-Ex Limited to HMI Elements Ltd.
2. Revised product name.
3. Correction of marking from Ex tb IIIB T135°C Db to Ex ib tb [ib Db] T135°C Db IP66

IECEx Certificate of Conformity

Certificate No:	IECEx ITS 13.0017	Issue No: 2
Date of Issue:	2018-04-27	Page 6 of 6

Additional information:

Routine tests, if any:

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.

Annex:

Annex for IECEx Certificate.pdf

Annex to IECEx Certificate of Conformity

Certificate No:	IECEx ITS 13.0017	Issue No. 2
Annex No. 1		

Technical 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.

Required Manufacturer Routine Testing		
Test	Title/Description of Test	Standard and Clause
1	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.	IEC 60079-7, Clause 7.1
2	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.	IEC 60079-7, Clause 7.1