



# 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](http://www.iecex.com)

Certificate No.: IECEx SIR 13.0128X

Issue No: 4

Certificate history:

Status: **Current**

Issue No. 4 (2018-04-05)

Issue No. 3 (2017-05-30)

Date of Issue: **2018-04-05**

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Issue No. 2 (2015-02-04)

Issue No. 1 (2014-09-29)

Issue No. 0 (2013-10-30)

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

Equipment: **1302 Z2 Industrial PC**

Optional accessory:

Type of Protection: **Non Sparking, Intrinsic Safety and Dust**

Marking:

Ex nA [ic] IIC T4 Gc (Gc)

Ex tc III C T135°C Dc

Ta = -40°C to +55°C or +60°C

The above marking details all the information that is applicable to the range of 1302 Z2 Industrial PCs, however, the marking that is put on individual models depends on the devices that are used in their construction, refer to Specific Conditions of Use clause 2

Approved for issue on behalf of the IECEx  
Certification Body:

R A Craig

Position:

Certification Support Officer

Signature:  
(for printed version)

Date:

2018-04-05

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](http://www.iecex.com).

Certificate issued by:

**SIRA Certification Service**  
CSA Group  
Unit 6, Hawarden Industrial Park  
Hawarden, Deeside, CH5 3US  
United Kingdom

**sira**  
CERTIFICATION





# IECEX Certificate of Conformity

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Manufacturer: **HMI Elements Ltd.**  
Unit A & B Windmill Industrial Estate  
Showfield Lane  
Malton  
North Yorkshire YO17 6BT  
**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** Explosive atmospheres - Part 0: General requirements  
Edition:6.0
- IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0
- IEC 60079-15 : 2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"  
Edition:4
- IEC 60079-31 : 2008** Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'  
Edition:1

*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/SIR/ExTR13.0300/00 GB/SIR/ExTR14.0229/00 GB/SIR/ExTR15.0041/00
- GB/SIR/ExTR17.0024/00 GB/SIR/ExTR18.0052/00

Quality Assessment Report:

- NO/DNV/QAR09.0001/03



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The 1302 Z2 Industrial PC is a flange mounting, 19" workstation that is designed for use in industrial conditions. The housing is fabricated from anodized aluminium and provides an ingress protection of IP66. A touch screen is fitted within the glass window in the lid. The equipment can be either AC powered via an auto ranging 90 – 260 V a.c., 50 to 60 Hz or DC powered via an 18 – 35 (24 nominal) V d.c. supply. The power supply and the connection of peripheral equipment are achieved using certified cable glands or connectors that are fitted in the connection plate at the rear of the housing.

The 1302 can contain the following components:

- AC or DC power supply
- 19" LED backlit LCD Display
- Projected capacitive touchscreen (PCT)
- PC board including a 10 W Dual Core Intel Atom processor and up to 4 GB of RAM
- Up to 2 solid state disk drives
- Heater mat
- Air circulating fan
- Wi-Fi module
- Fibre Media converter

The above components are listed on the GA, drawing D100090, which also details other optional devices that may be fitted. Refer to the Annexe for Parameters and Additional Information.

**SPECIFIC CONDITIONS OF USE: YES as shown below:**

See Annexe for Specific Conditions of Use.



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

**This issue, issue 4, recognises the following change; refer to the certificate annex to view a comprehensive history:**

1. The Applicant's and Manufacturer's name was changed, from **Smart-Ex Technology Limited** to **HMI Elements Ltd.**

**Annex:**

[IECEX SIR 13-0128X Iss 4 Annexe.pdf](#)

**Annexe to:** IECEx SIR 13.0128X Issue 4  
**Applicant:** HMI Elements Ltd.  
**Apparatus:** 1302 Z2 Industrial PC



The equipment may be fitted with a PS2 Interface, which contains a shunt zener diode interface.

The PS2 interface allows the equipment to be connected to a computer or similar device in the non-hazardous area and a suitably-certified external keyboard in a zone 2 hazardous area. The nominal supply voltage (Un) is 12 V d.c. Um = 250 V a.c. or d.c. The safety description of the PS2 interface is as follows:

Keyboard connector (CN8 interface)		Horn connector
Original	Revised	
Uo = 5.355 V	Uo = 5.355 V	Uo = 27.81 V
Io = 0.300 A	Io = 0.246 A	Io = 0.089 A
Po = 0.752 W	Po = 0.649 W	Po = 0.617 W
Ci = 11.33 µF	Ci = 11.33 µF	Ci = 0
Co = 494 µF	Co = 494 µF	Co = 84 nF
Li = 0	Li = 0	Li = 0
Lo = 444 µH	Lo = 660 µH	Lo = 4488 µH

**Specific Conditions of Use**

The user/installer shall comply with the following:

- i. To prevent the development of hot surfaces exceeding the temperature class, the user shall mount the PC with screen orientated vertically and in landscape.
- ii. The user/installer shall install the 1302 taking into account any restrictions or special conditions for safe use that are applicable to the previously certified devices that are fitted to the 1302.
- iii. When fitted with an intrinsically safe interface (i.e. when the equipment coding includes “[ic]”), the user shall ensure that the equipment is connected to a barrier safety earth that complies with IEC 60079-14:2007 clause 12.2.4.
- iv. The 1302 Workstations shall be installed and used within the ambient temperature range that is marked on the product, however, when the products are being stored, the lower temperature remains the same, but the maximum temperature may be raised to 80°C.
- v. When the following external connectors are used, transient voltage protection shall be provided by the external circuits to ensure that transient over-voltages to the connectors cannot exceed 140% of 85 V.
  - Amphenol Socapex RJ45 connectors.
  - Amphenol Socapex USB connectors, except when connected to a client/slave device that derives power from the 1302 PC’s internal power rails.
  - N-Type connectors, except when connected to an Antenna.
  - Amphenol PT02 or PT07 series connectors with the following exceptions.

Connector (x = 2 or 7)	Function
PT0xA-12-3P	AC Power (input)
PT0xA-12-4P	DC Power (input)
PT0xA-12-10P	Intrinsically safe horn only (output)
PT0xA-12-10S	When used for LAN or USB and connected to a client/slave device that derives power from the 1302 PC

- vi. When fitted with external connectors the following conditions shall be met:
  - a. The connectors shall be electrically isolated before any attempt is made to remove the covers or join or separate the two halves.
  - b. Following disconnection, the energised power supply shall only be connected to the connector part incorporating the socket connections.

**Annexe to:** IECEx SIR 13.0128X Issue 4  
**Applicant:** HMi Elements Ltd.  
**Apparatus:** 1302 Z2 Industrial PC



- c. The plug and connector part containing the pin connections shall not be connected to equipment containing a power supply or energy storage devices likely to cause the plug to remain energised after disconnection
- d. . When separated, the flameproof caps shall be fitted and locked immediately and before any associated supply cables are re-energised.
- vii. The 1302 shall be located where there is a low risk of impact.
- viii. When a non-conducting coating is applied to the outside face of the glass the equipment may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user shall ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high pressure steam) which might cause a build up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment shall be done with a damp cloth.
- ix. When used for the power supply the PT02 or PT07 series fixed connectors shall only be mated with the following free connectors complying with MIL-C-26482.
  - Amphenol PT06x-12-3S connector when used for AC input power. Connector back shell to be potted and a routine electrical strength test carried out in accordance with drawing D100205  
x = backshell types U, US, UT or UW
  - Amphenol PT06W-12-4S connector
- x. This equipment may incorporate intrinsically safe devices that shall be installed taking into account the entity parameters that have been defined by the manufacturer for the product that has been supplied.

**Conditions of Manufacture**

- i. An electrical strength test shall be carried out on the fixed and free mating halves of the mains supply connector when potted. The test shown in the table below shall be applied between all connector pins and between the connector pins and earth as required by clause 6.5.1 of EN 60079-15:2010 (ATEX) / IEC 60079-15:2010 (IECEX).

Maximum Rated Voltage (V)	Dielectric Test Voltage (Vac)	Test Duration (sec)
260	1520 +5%/-0%	>60

Alternatively, the above test voltage may be increased by 1.2 times and tested for at least 100mS as stated in clause 23.2.1 of EN 60079-15:2010 (ATEX) / IEC 60079-15:2010 (IECEX).

- ii. The manufacturer shall provided the user/installer with the specific safety parameters that are applicable to each device as supplied.

The condition relating to the marking of the equipment is modified to include the horn interface and remove the upper ambient of +55°C for the AC version without the Rota DE2 connectors.

- iii. Each 1302 Z2 Industrial PC shall be marked as specified below dependent upon the equipment used in its construction:

**Without Rota DE2 connectors/with I.S. interface(s)**

Ex nA [ic] IIC T4 Gc (Gc)  
 Ex tc IIIC T135°C Dc  
 Ta = -40°C to +60°C

**Without Rota DE2 connectors/without I.S. interface(s)**

Ex nA IIC T4 Gc  
 Ex tc IIIC T135°C Dc  
 Ta = -40°C to +60°C

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**Applicant:** HMi Elements Ltd.  
**Apparatus:** 1302 Z2 Industrial PC



**With Rota DE2 connectors/with I.S. interface(s)**

Ex nA [ic] IIC T4 Gc (Gc)  
Ta = -40°C to +55°C

**With Rota DE2 connectors/without I.S. interface(s)**

Ex nA IIC T4 Gc  
Ta = -40°C to +55°C

- iv. When this equipment incorporates intrinsically safe devices, the manufacturer shall provide the user/installer with the entity parameters that are applicable to the product they have supplied.

**Full Certificate Change History**

**Issue 1** – this Issue introduced the following changes:

1. The introduction of a range of coatings and finishes for the 19"Zytronic Touch-Screen Glass. The surface may be optionally coated or finished with any combination of the following: Hard-Coated Polyester Film, Anti-Reflective Coating, UV Blocking Layer, Anti Reflective Film, IR Blocking Polyester Film, and Anti-Glare Etch. A new Condition of Certification and a new Condition of Manufacture were introduced as a result of this change

**Issue 2** – this Issue introduced the following changes:

- 1 The introduction of a blower fans for cooling the display.  
2 The introduction of the following, alternative types of component parts:
- CPU System
  - Touchscreen
  - WiFi Module
  - Backlight LED Driver
  - Connector plate
  - External Connectors
  - LCD Display
- 3 The introduction of the following, optional component parts:
- External ON/OFF Button
  - CPU Adapter Plate
  - USB/PS2 Converter Module
  - Fibre Optic Connector
  - Bluetooth Transceiver
  - Antenna Blanking Plate
  - USB to RS232 Adapter
- 4 The introduction of alternative enclosure finishes.  
5 The introduction of an alternative location for the thermistor on the heater mat.  
6 The modification of the condition of use/special condition for safe use related to transient protection.  
7 The introduction of a horn controller board with an intrinsically safe interface; the entity parameters are defined below:
- |              |            |              |
|--------------|------------|--------------|
| Uo = 27.81 V | Ci = 0     | Li = 0       |
| Io = 0.089 A | Co = 84 nF | Lo = 4488 µH |
| Po = 0.617 W |            |              |
- 8 The value of resistors in the PS/2 (keyboard) interface were changed, as a result, new entity parameters were recognised, as defined below:
- |              |               |             |
|--------------|---------------|-------------|
| Uo = 5.355 V | Ci = 11.33 µF | Li = 0      |
| Io = 0.246 A | Co = 494 µF   | Lo = 660 µH |
| Po = 0.649 W |               |             |
- 9 The introduction of minor drawing changes; to include a drawing control stamp as required by the manufacturer's quality control system; which have no influence on the compliance of the equipment.  
10 The condition relating to the marking of the equipment was modified to include a generic interface description and remove the upper ambient of +55°C for the AC version without the Rota DE2 connectors.

**Issue 3** – this Issue introduced the following changes:

- 1 The Applicant's and Manufacturer's name was changed:  
From: **iSiS-Ex Limited** To: **Smart-Ex Technology Limited**
- 2 The product name was changed  
From: **iSiS1302 Industrial PC** To: **1302-Z2 Industrial PC**  
The description was amended accordingly

**Date:** 05 April 2018

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**Annexe to:** IECEx SIR 13.0128X Issue 4  
**Applicant:** HMi Elements Ltd.  
**Apparatus:** 1302 Z2 Industrial PC

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**Issue 4** – this Issue introduced the following changes:

- 1 The Applicant's and Manufacturer's name was changed:  
From: **Smart-Ex Technology Limited** To: **HMi Elements Ltd.**

**Date:** 05 April 2018

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**Form 9530 Issue 1**

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