

Type Examination Certificate CML 22UKEX4607X Issue 0**United Kingdom Conformity Assessment**

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended)
- 2 Equipment **1302 Z2 Industrial PC**
- 3 Manufacturer **HMi Elements Ltd.**
- 4 Address Unit A & B Windmill Industrial Estate
Showfield Lane
Malton
North Yorkshire YO17 6BT
United Kingdom

5 The equipment is specified in the description of this certificate and the documents to which it refers.

6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential reports listed in Section 12.

7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to specific conditions of use (affecting correct installation or safe use). These are specified in Section 14.

8 This Type Examination certificate relates only to the design and construction of the specified equipment. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:


EN IEC 60079-0:2018

EN 60079-15:2010

EN 60079-11:2012

EN 60079-31:2014

10 The equipment shall be marked with the following:

 II 3 G D

Ex nA IIC T4 Gc or Ex nA [ic] IIC T4 Gc

Ex tc IIIC T135°C Dc or Ex tc [ic] IIIC T135°C Dc

Ta = -40°C to +55°C or +60°C

Note: The ambient temperature range and intrinsically safe output marking is dependent upon options fitted.



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11 Description

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.

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 safety description of the PS2 interface is as follows:

| |
|---|
| Keyboard connector (CN8 interface) |
| $U_o = 5.355 \text{ V}$ |
| $I_o = 0.246 \text{ A}$ |
| $P_o = 0.649 \text{ W}$ |
| $C_i = 11.33 \mu\text{F}$ |
| $C_o \text{ (IIC)} = 988 \mu\text{F}$ |
| $L_i = 0$ |
| $L_o \text{ (IIC)} = 1320 \mu\text{H}$ |
| NOTE – lumped inductance in the connected equipment must not exceed $13.2 \mu\text{H}$, excluding the cable. |



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The equipment may be fitted with an intrinsically safe horn output. The safety description of the output is as follows:

| |
|---|
| Horn connector |
| $U_0 = 27.81 \text{ V}$ |
| $I_0 = 0.089 \text{ A}$ |
| $P_0 = 0.617 \text{ W}$ |
| $C_i = 0$ |
| $C_0 \text{ (IIC)} = 275 \text{ nF}^*$ |
| $L_i = 0$ |
| $L_0 \text{ (IIC)} = 10.1 \text{ mH}^*$ |

*As per clause 10.1.5.2 of EN 60079-11, if the connected equipment contains both lumped capacitance and inductance then either:

- The total L_i of the external equipment, excluding the cable, shall not exceed $101 \mu\text{H}$, or
- The total C_i of the external equipment, excluding the cable, shall not exceed 2.75 nF , or
- The total L_i of the external equipment, excluding the cable, shall not exceed 5 mH , and the total C_i of the external equipment, excluding the cable, shall not exceed 137 nF

12 Certificate history and evaluation reports

| Issue | Date | Associated report | Notes |
|-------|-------------|-------------------|----------------------------|
| 0 | 14 Dec 2022 | R15773A/00 | Issue of prime certificate |

Note: Drawings that describe the equipment are listed in the Annex.

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components, the manufacturer of the product defined on this certificate shall continually monitor these parts/components for any modifications introduced by the manufacturer(s) of these constituent parts. If the manufacturer of any constituent part introduces any changes which affect the compliance of the certified product that is the subject of this certificate, the manufacturer is required to have this certificate updated.



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- ii. 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

| 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

14 Specific Conditions of Use

The following conditions relate to safe installation and/or use of the equipment.

- 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 |



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

Certificate Annex

Certificate Number CML 22UKEX4607X
Equipment 1302 Z2 Industrial PC
Manufacturer HMi Elements Ltd.



The following documents describe the equipment defined in this certificate:

Issue 0

| Drawing No | Sheets | Rev | Approved date | Title |
|------------|--------|-----|---------------|---|
| 60-04-2754 | 1 of 1 | B1 | 13 Dec 2022 | Phoenix Contact 2.54mm Pitch PCB Terminal Block |
| 60-04-2755 | 1 of 1 | B1 | 13 Dec 2022 | Tyco 7.62mm Pitch PCB Terminal Block |
| D100004 | 1 of 1 | B1 | 13 Dec 2022 | Fischer Connector |
| D100028 | 1 of 1 | C1 | 13 Dec 2022 | N-Type Connector |
| D100029 | 1 of 1 | B2 | 13 Dec 2022 | RJ45 Connector |
| D100030 | 1 of 1 | C1 | 13 Dec 2022 | USB Connector |
| D100038 | 1 of 1 | B | 13 Dec 2022 | Touchscreen Glass |
| D100039 | 1 of 1 | B1 | 13 Dec 2022 | Touchscreen Glass Gasket |
| D100090 | 1 to 4 | E2 | 13 Dec 2022 | GA Drawing and Certification Parts List |
| D100094 | 1 to 2 | A2 | 13 Dec 2022 | DC Input Board |
| D100095 | 1 to 2 | A1 | 13 Dec 2022 | AC Input PSU Board |
| D100096 | 1 of 1 | B0 | 13 Dec 2022 | Display Glass Clamp |
| D100098 | 1 of 1 | B1 | 13 Dec 2022 | PCB Assemblies Connector List |
| D100099 | 1 of 1 | B0 | 13 Dec 2022 | Enclosure front |
| D100101 | 1 of 1 | A1 | 13 Dec 2022 | Serial Connector |
| D100103 | 1 to 4 | B0 | 13 Dec 2022 | Data Line Protection and Connection Board |
| D100108 | 1 to 2 | B1 | 13 Dec 2022 | Connector Plate Entry Options |
| D100110 | 1 of 1 | A1 | 13 Dec 2022 | Internal Earth Stud Arrangement |
| D100111 | 1 of 1 | A1 | 13 Dec 2022 | Phoenix Contact 3.81mm Pitch PCB Terminal Block |
| D100112 | 1 to 2 | A1 | 13 Dec 2022 | Electrical Connection Information |
| D100113 | 1 of 1 | A1 | 13 Dec 2022 | Molex 3.5mm Pitch PCB Terminal Block |
| D100114 | 1 to 2 | B1 | 13 Dec 2022 | Enclosure Back |
| D100115 | 1 of 1 | A1 | 13 Dec 2022 | Connector Plate Gasket |
| D100116 | 1 of 1 | B0 | 13 Dec 2022 | Display Heater Mat |
| D100176 | 1 of 1 | A1 | 13 Dec 2022 | iSiS 19" Zytronic Touchscreen Glass |
| D100177 | 1 of 1 | A0 | 13 Dec 2022 | iSiS1302 19" Dytos Touchscreen Glass |
| D100178 | 1 of 1 | A0 | 13 Dec 2022 | Amphenol TVS Fibre Optic Connector |
| D100179 | 1 to 4 | A0 | 13 Dec 2022 | iSiS1302 Horn Controller Board (SA691) |
| D100180 | 1 to 3 | B1 | 13 Dec 2022 | Heatsink drawing |

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Equipment 1302 Z2 Industrial PC
Manufacturer HMI Elements Ltd.



| Drawing No | Sheets | Rev | Approved date | Title |
|------------|--------|-----|---------------|---|
| D100181 | 1 of 1 | A0 | 13 Dec 2022 | iSiS1302 Sealed Switch |
| D100182 | 1 of 1 | A0 | 13 Dec 2022 | iSiS1302 Antenna Blanking Plate |
| D100183 | 1 of 1 | A0 | 13 Dec 2022 | iSiS1302 Antenna Blanking Plate Gasket |
| D100184 | 1 to 2 | B0 | 13 Dec 2022 | iSiS1302 Amphenol Miniature Cylindrical Connectors (PT02 flange mount types) |
| D100185 | 1 to 2 | B0 | 13 Dec 2022 | iSiS1302 Amphenol Miniature Cylindrical Connectors (PT07 jam nut mount types) |
| D100189 | 1 of 1 | A0 | 13 Dec 2022 | iSiS1302 Display Fan Guide |
| D100190 | 1 of 1 | A0 | 13 Dec 2022 | Phoenix Contact 5mm Pitch PCB Terminal Block |
| D100204 | 1 of 1 | A0 | 13 Dec 2022 | iSiS1302 i7 BIOS Backup Battery |
| D100205 | 1 to 3 | A0 | 13 Dec 2022 | Potting Tolerances for Amphenol Flange Mounted Connectors |
| D100208 | 1 of 1 | B0 | 13 Dec 2022 | Intrinsically Safe Wiring - Separation |
| D100340 | 1 of 1 | - | 13 Dec 2022 | 31C4588STJG_A00_20150702 schematics |
| D100345 | 1 of 1 | A0 | 13 Dec 2022 | BOM_EXC31C4554TDG_G_A00_20151217 |
| D100341 | 1 of 1 | - | 13 Dec 2022 | EXC80H4254STBG_A00_G_20170622 schematics |
| D100344 | 1 of 1 | A0 | 13 Dec 2022 | BOM_EXC80H4254STBG_A00_G_20170622 |
| D100342 | 1 of 1 | - | 13 Dec 2022 | EXC84H4254STAG_A00_20180130 schematics |
| D100343 | 1 of 1 | A0 | 13 Dec 2022 | BOM_EXC84H4254STAG_A00_20180130 |
| D100408 | 1 of 1 | A0 | 13 Dec 2022 | Carrier Board dimension |
| D100456 | 1 to 2 | A1 | 13 Dec 2022 | SA1836 Power Supply AC to DC |
| D100458 | 1 to 2 | A3 | 13 Dec 2022 | 1302-Z2 Specification plate and warning label |