

## UK Type Examination Certificate CML 21UKEX1069X Issue 1

### United Kingdom Conformity Assessment

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended) – Schedule 3A, Part 1
- 2 Equipment **1301-Z1 Industrial Computer**
- 3 Manufacturer **HMI Elements Ltd.**
- 4 Address **Unit A & B,  
Windmill Industrial Estate,  
Malton, North Yorkshire,  
YO17 6BT, United Kingdom**

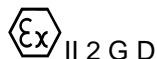
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, Approved Body Number 2503, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), 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 UK 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 IEC 60079-18:2015+A1:2017	EN 60079-11:2012
EN 60079-1:2014	EN 60079-7:2015+A1:2018	EN 60079-28:2015
EN 60079-31:2014		

- 10 The equipment shall be marked with the following:



Without media converter:

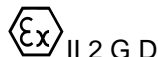
Ex db eb mb {option} IIC T4 Gb

Ex tb {option} IIIC T90°C Db

-40°C ≤ Ta ≤ +60°C

{option} = [ib] if Horn interface fitted and no WiFi antenna is fitted

{option} = ib if WiFi antenna is fitted



With media converter:

Ex db eb mb op is {option} IIC T4 Gb

Ex tb op is {option} IIIC T90°C Db

-40°C ≤ Ta ≤ +55°C



**CML 21UKEX1069X**  
**Issue 1**

## 11 Description

The 1301-Z1 Industrial Computer is a stand-alone rugged PC with 19" touchscreen for use in hazardous areas requiring equipment protection level Gb or Db.

The equipment comprises a metallic IP66 rated enclosure with a sealed toughened glass display front panel and touchscreen. An internal flameproof compartment houses the power supply, computer unit, and multiple boards and interfaces. The display and touchscreen are encapsulated and are connected to circuits within the flameproof compartment via line bushings or glands.

Multiple wired, optical, and wireless outputs are provided for the connection of external equipment, including intrinsically safe connections which are connected to circuits within the flameproof compartment via intrinsically safe barrier circuits.

The intrinsically safe connections have the following parameters:

Connector	Output parameters
Horn interface	Uo = 26.0V Io = 88mA Po = 0.57W Ci = 0 Li = 0
WiFi Antenna	Capacitively coupled

The following electrical connections to the equipment are not intrinsically safe and are made via cable glands or separately certified connectors:

Connector/entry	Rating
AC supply in	100Vac – 240Vac 50/60Hz, 1.3A
Ethernet*	+/- 2.5V 100mA
USB	5.5V 500mA
RS232	+/- 12V 100mA
RS485	3.5V 100mA

\*The equipment may optionally be supplied with an externally mounted separately certified intrinsically safe barrier attached to the ethernet port. Refer to the barrier certificate for electrical parameters.

The equipment may be supplied with an "op is" fibre optic communication port.

### Variation 1:

This variation introduced the following modifications:

- To change the LCD and touchscreen assembly
- To update document package

## 12 Certificate history and evaluation reports



**CML 21UKEX1069X**  
**Issue 1**

Issue	Date	Associated report	Notes
0	18 Jan 2022	R13624A/00	Issue of the prime certificate. CML 19ATEX1320X, Issue 1 is attached and shall be referred to in conjunction with this certificate.
1	10 Mar 2023	R16031A/00	Introduction of Variation 1.

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.
- ii. The flameproof enclosure, complete with blanking plugs, shall be subjected to an overpressure test at a minimum pressure of 25 bar in accordance with EN 60079-1:2014 clause 16. There shall be no damage or permanent deformation of the enclosure nor shall there be any leakage through the enclosure walls. The lid and base of the flameproof enclosure may be tested separately.
- iii. Each mains fuse assembly shall be visually inspected. No damage shall be evident, such as cracks in the compound, exposure of encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion, or softening.
- iv. Each mains fuse assembly shall be subjected to an electric strength test in accordance with EN 60079-18 Clause 9.2 using a test voltage of 1500Vac applied between the terminals and the surface of the encapsulant (covered in foil), for a period of 1 second.

Alternatively:

- a. A voltage of 20% higher may be applied for 0.1 second.
- b. A d.c. test voltage is allowed as an alternative to the a.c. test voltage and shall be 170% of the specified a.c. r.m.s. test voltage.

Alternatively, the equipment may be subjected to batch testing in accordance with EN60079-18 Annex C.

- v. Each display assembly shall be visually inspected. No damage shall be evident, such as cracks in the compound, exposure of encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition, failure of adhesion, or softening.
- vi. Each display assembly shall be subjected to an electric strength test in accordance with EN 60079-18 Clause 9.2 using a test voltage of 500Vac applied between the terminals and the frame of the equipment, for a period of 1 second.

Alternatively:



**CML 21UKEX1069X**  
**Issue 1**

- a) A voltage of 20% higher may be applied for 0.1 second.
  - b) A d.c. test voltage is allowed as an alternative to the a.c. test voltage and shall be 170% of the specified a.c. r.m.s. test voltage.
- vii. The equipment shall be subjected to an electric strength test in accordance with the requirements of EN 60079-7 Clause 6.1 using a test voltage of 1500Vac applied between the supply terminals and frame, for a period of 1 second.
- Alternatively, a d.c. test voltage is allowed as an alternative to the a.c. test voltage and shall be 170% of the specified a.c. r.m.s. test voltage.
- viii. The manufacturer shall ensure that any equipment certified cable glands, bushings, breather drains, and connectors fitted to the equipment meet the requirements of EN IEC 60079-0:2018, EN60079-1:2014, EN60079-31:2014 and EN60079-7:2015 as appropriate, and that all conditions of use and relevant ratings are adhered to. All such parts shall be suitable for use at a service temperature range -40°C to 70°C. Any such parts fitted to the exterior of the equipment enclosure shall provide a minimum ingress protection of IP66. If any such parts do not meet the requirements of EN60079-31:2014, then the equipment shall not be marked as being suitable for use in explosive dust environments.
- ix. Entries into the equipment for all non intrinsically safe connections shall be via suitably certified cable glands or via suitably certified Ex d e t plugs and sockets. If any such connectors do not meet the requirements of EN 60079-31:2014, then the equipment shall not be marked as being suitable for use in explosive dust environments.
- x. When fitted with a Cotswolds Fibre optic transceiver, the manufacturer shall ensure that all conditions of safe use detailed on certificate IECEx TUR 17.0028X are complied with.
- xi. When fitted with an external Solexy RF barrier, the manufacturer shall ensure that all conditions of use detailed on certificate TUV CY18ATEX0206158X are complied with and that a copy of the certificate is provided to the end user.
- xii. When fitted with an external Solexy ethernet barrier, the manufacturer shall ensure that all conditions of use detailed on certificate TUV CY18ATEX0206141X are complied with and that a copy of the certificate is provided to the end user.

## **14 Specific Conditions of Use**

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

- i. When installed in area requiring equipment protection level Db, under certain extreme circumstances, the coated metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces e.g. where a charge-generating mechanism (such as wind-blown dust or steam generation) is possible. In addition, the equipment shall only be cleaned with a damp cloth.
- ii. The bolts securing the lid of the flameproof compartment shall be M6 x 1mm x 24 mm (min) to 36 mm (max) alloy steel hexagon socket head types with a material grade of 12.9 or better.
- iii. When the equipment is supplied with an externally mounted ethernet barrier, the user shall refer to the certificate of the barrier for details of the output parameters of the barrier.

## Certificate Annex

**Certificate Number** CML 21UKEX1069X  
**Equipment** 1301-Z1 Industrial Computer  
**Manufacturer** HMI Elements Ltd.



The following documents describe the equipment defined in this certificate:

### Issue 0

For all drawings, refer to attached certificate CML 19ATEX1320X Issue 1.

### Issue 1

Drawing No	Sheets	Rev	Approved date	Title
D100401	1 to 7	A6	09 Mar 2023	1301_Z1 - Earth Stud Arrangement
D100403	1 of 1	B0	09 Mar 2023	Front Heater Mat
D100414	1 to 2	A1	09 Mar 2023	SA1320- IS Horn Board Circuit Schematic and PCB Layout
D100415	1 to 19	A1	09 Mar 2023	SA1320 _A2 - IS horn Board Circuit Description
D100419	1 to 3	A8	09 Mar 2023	1301-Z1 - Electrical Block Wiring Diagram
D100431	1 to 3	A1	09 Mar 2023	1301-Z1 - Touchscreen controller fuse placement assembly
D100434	1 to 3	B0	09 Mar 2023	1301 Z1 - LCD Fuse Placement Assembly
D100438	1 of 2	B0	09 Mar 2023	Front Heater Matt Trace Layout
D100440	1 to 13	A5	09 Mar 2023	1301_Z1 - General Assembly
D100441	1 to 4	A2	09 Mar 2023	Ex m - Encapsulated assembly - Drawing
D100444	1 of 1	A1	09 Mar 2023	1301-Z1 potting procedure
FMTN-166	1 to 10	A0	09 Mar 2023	1301 LCD fill procedure
NEL-2022-1852-HA	1	PT1	09 Mar 2023	Heater assembly
D100427	1 to 2	A8	09 Mar 2023	1301-Z1 - Specification Plate and warning labels