IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

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

Certificate No.: **IECEx CML 19.0096X**

Certificate history:

Status: **Current**

Issue No: 0

Date of Issue: 2020-04-29

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

Equipment: **1301-Z1 Industrial Computer**

Optional accessory:

Type of Protection: **Flameproof, intrinsic safety, increased safety, powder filled, optical, encapsulation, dust**

Marking:

Without media converter:	With media converter:
Ex db eb mb *{option}* IIC T4 Gb Ex tb *{option}* IIIC T90°C Db -40°C≤Ta≤+60°C	Ex db eb mb op is *{option}* IIC T4 Gb Ex tb op is *{option}* IIIC T90°C Db -40°C≤Ta≤+55°C

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

Approved for issue on behalf of the IECEx Certification Body: **H M Amos**

Position: **Certification Manager**

Signature: (for printed version)

Date: April 29th, 2020

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 www.iecex.com or use of this QR Code.

Certificate issued by:

Eurofins E&E CML Limited
Unit 1, Newport Business Park
New Port Road
Ellesmere Port, CH65 4LZ
United Kingdom

IECEx Certificate of Conformity

Certificate No.: **IECEx CML 19.0096X** Page 2 of 3

Date of issue: 2020-04-29 Issue No: 0

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

Additional manufacturing locations:

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 equipment 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

IEC 60079-18:2017 Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

IEC 60079-28:2015 Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
Edition:2

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with 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/CML/ExTR19.0120/00

Quality Assessment Report:

NO/DNV/QAR09.0001/07

IECEx Certificate of Conformity

EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

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.

See Annex for full description and Conditions of Manufacture

SPECIFIC CONDITIONS OF USE: YES as shown below:
See Annex for details

Annex:

IECEx CML 19.0096X Annex Issue 0.pdf

Annexe to:	IECEx CML 19.0096X Issue 0
Applicant:	HMI Elements Ltd.
Apparatus:	1301-Z1 Industrial Computer

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.

Unit 1, Newport Business Park
New Port Road
Ellesmere Port
CH65 4LZ

T +44 (0) 151 559 1160
E info@cmlex.com

www.cmlex.com

Company Reg No. 8554022 VAT No. GB163023642

Conditions of Manufacture

i. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.

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 IEC 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 IEC 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 IEC 60079-18 Ed.4.1 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 IEC 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:

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 IEC 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 IEC 60079-0 Ed. 7, IEC 60079-1 Ed. 7, IEC 60079-31 Ed. 2 and IEC 60079-7 Ed. 5 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 IEC 60079-31 Ed. 2, 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 IEC 60079-31 Ed. 2, then the equipment shall not be marked as being suitable for use in explosive dust environments.

x. When fitted with a Cotsworks 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 IECEx MSC 19.0001X 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 IECEx MSC 18.0014X are complied with and that a copy of the certificate is provided to the end user.

Specific Conditions of Use

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.

Components covered by Ex Certificates issued to older editions of Standards

Certificate number	Standards (incl Ed)	Assessment result
IECEx PTB 06.0096U	IEC60079-0 Ed. 6	Technical differences evaluated and found satisfactory. For detail see ExTR
IECEx CML 15.0060U	IEC60079-0 Ed. 6	