EU Type Examination Certificate CML 16ATEX2050X Issue 0

1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

2 Equipment **BxLAN Ethernet Interface**

3 Manufacturer **Controlled Systems Ltd**

4 Address Ryder Close, Swadlincote,
Derbyshire, DE11 9EU
UK

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

6 Certification Management Limited, Unit 1 Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK, Notified Body Number 2503, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 Annex II to the Directive.

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 conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.

8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.

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 60079-0:2012:A11:2013 EN 60079-11:2012

10 The equipment shall be marked with the following:

Ex I (M1)	Ex II (1GD)
[Ex ia Ma] I	[Ex ia Ga] IIC or IIB*
	[Ex ia Da] IIIC
Ta = -40°C to +70°C	Ta = -40°C to +70°C

* Models 9474-ETG and BxLAN-GE are marked IIB.
Models 9474-ET and BxLAN-OEM are marked IIC.

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11 Description

The BxLAN Ethernet Interfaces are associated apparatus and are intrinsically safe interface devices which allow Ethernet to be extended into hazardous areas. The interfaces are intended to be incorporated into other larger apparatus, or may be supplied as stand-alone, boxed equipment. The following models are available:

Part no.	Data rate	Configuration	Suitable groups
9474-ETG	Gigabit	Boxed version	I, IIA, IIB, IIIC
9474-ET	10/100Mbps	Boxed version	I, IIA, IIB, IIC, IIIC
BxLAN-GE	Gigabit	PCB without enclosure	I, IIA, IIB, IIIC
BxLAN-OEM	10/100Mbps	PCB without enclosure (optional covers)	I, IIA, IIB, IIC, IIIC

Intrinsic safety is achieved by limiting the energy which can be transferred from the safe area to the hazardous area.

The equipment has the following safety description:

Safe area side SK1/PL1:

Um = 250 V

Hazardous area side SK2/PL2:

10/100Mbps versions			**Gigabit versions**		
Uo	=	6.0 V	Uo	=	6.0 V
Io	=	2.24 A	Io	=	4.48 A
Po	=	1.16 W	Po	=	2.32 W
Ci	=	0.504 uF	Ci	=	0.504 uF
Li	=	0	Li	=	0
Ui	=	6.51 V	Ui	=	6.51 V

The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the load connected to the hazardous area terminals must not exceed the following values:

Version	Group	Capacitance Co (μF)	Inductance Lo (μH)	Or	L/R ratio (μH/ohm)
10/100Mbps	I	999	93.0		139
10/100Mbps	IIA	999	56.7		70.8
10/100Mbps	IIB/IIIC	999	28.3		42.2
10/100Mbps	IIC	39	7.1		10.6
Gigabit	I	999	23.3		69.5
Gigabit	IIA	999	14.2		35.4
Gigabit	IIB/IIIC	999	7.1		21.1

The above figures are based on the output voltage U_o = 6.0 V and output current I_o = 2.24 A or 4.48 A, and if any higher voltage or current is connected, these should be adjusted accordingly.

The hazardous area port may be connected to any other equipment having appropriate Entity parameters.

It is also permissible to be connected to 9400 Ethernet modules covered by these existing certificates (with or without PoEx):

9400 Ethernet module reference	Certificate No.
9400 Series Ethernet Modules	Sira 07ATEX2064X
9468 Ethernet Isolator	Sira 07ATEX2065
9468 Ethernet Isolator (Zone 2)	Sira 08ATEX4130X

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	29 July 2016	R1047A/00	Report for the prime certificate issue

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

13 Conditions of manufacture

None.

14 Special Conditions for Safe Use (Conditions of Certification)

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

14.1 When the equipment is supplied for incorporation into larger apparatus, it must be installed within an enclosure providing a minimum ingress protection of IP20.

14.2 When the equipment is supplied for incorporation into larger apparatus, separations between the PCB and all other voltage sources within the enclosure must be in accordance with Table 5 of EN 60079-11.

14.3 The quoted entity parameters of Co and Lo are applicable for the distributed capacitance and inductance in cable. Where there is circuit capacitance or inductance in the connected equipment (represented by Ci and Li respectively), then these values shall not exceed 50 % of the quoted Co and Lo.

14.4 The safe area connection SK1 must only be connected to Ethernet sources which are not Power over Ethernet (PoE) capable.

14.5 Identical connectors are used for the safe area and hazardous area connections. Equipment labelling for correct connections shall be observed.

Certificate Annex

Certificate Number	CML 16ATEX2050X
Equipment	BxLAN Ethernet Interface
Manufacturer	Controlled Systems Ltd.

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No	Sheets	Rev	Approved date	Title
BxLAN ATEX-IECEx Label	1 of 1	1	29 Jul 2016	BxLAN ATEX-IECEx Certification label drawing
BxLAN ASSY	1 of 1	1	29 Jul 2016	CSL BxLAN Assembly Drawing
BxLAN	1 of 1	1	29 Jul 2016	IS Ethernet I/F (gigabit) circuit diagram
BxLAN-OEM	1 of 1	2	29 Jul 2016	IS Ethernet I/F (10/100Mbps) circuit diagram
BxLAN PCB	1 of 1	1	29 Jul 2016	BxLAN artworks
BxLAN-OEM PCB	1 of 1	2	29 Jul 2016	BxLAN-OEM artworks