



# 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 CML 16.0025X	Issue No: 0	Certificate history: <a href="#">Issue No. 0 (2016-08-01)</a>
Status:	Current	Page 1 of 4	
Date of Issue:	2016-08-01		
Applicant:	<b>Controlled Systems Ltd.</b> Ryder Close, Swadlincote, Derbyshire DE11 9EU United Kingdom		
Equipment:	<b>BxLAN Ethernet Interface</b>		
Optional accessory:			
Type of Protection:	<b>[Ex ia]</b>		
Marking:	<b>[Ex ia Ma] I</b> <b>[Ex ia Ga] IIC or IIB*</b> <b>[Ex ia Da] IIIC</b> <b>Ta = -40°C to +70°C</b>		

\* Refer to certificate Annex for further information on gas group marking options

Approved for issue on behalf of the IECEx  
Certification Body:

A Snowdon

Position:

Certification Officer

Signature:  
(for printed version)

A Snowdon

Date:

August 1, 2016

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](#).

Certificate issued by:



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Certification Management Limited  
Unit 1, Newport Business Park  
New Port Road  
Ellesmere Port  
CH65 4LZ  
United Kingdom





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Manufacturer: **Controlled Systems Ltd.**  
Ryder Close,  
Swadlincote,  
Derbyshire  
DE11 9EU  
**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 electrical 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

*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/CML/ExTR16.0033/00](#)

Quality Assessment Report:

[GB/SIR/QAR07.0023/09](#)



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## Schedule

### EQUIPMENT:

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

BxLAN Ethernet Interface

**See Annex for full description and Conditions of Manufacture**

**CONDITIONS OF CERTIFICATION: YES as shown below:**

**See Annex for Conditions of Certification**

### Annex:

[Certificate Annex IECEx CML 16.0025X Issue 0.pdf](#)

**Annexe to:** IECEx CML 16.0025X, Issue 0  
**Applicant:** Controlled Systems Ltd.  
**Apparatus:** BxLAN Ethernet Interface



## Product 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 = 250V

Hazardous area side SK2/PL2:

### 10/100Mbps versions

Uo = 6.0 V  
 Io = 2.24 A  
 Po = 1.16 W  
 Ci = 0.504 uF  
 Li = 0  
 Ui = 6.51 V

### Gigabit versions

Uo = 6.0 V  
 Io = 4.48 A  
 Po = 2.32 W  
 Ci = 0.504 uF  
 Li = 0  
 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

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Version	Group	Capacitance Co ( $\mu$ F)	Inductance Lo ( $\mu$ H)	Or	L/R ratio ( $\mu$ H/ohm)
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	IECEX SIR 07.0042X
9468 Ethernet Isolator	IECEX SIR 07.0043
9468 Ethernet Isolator (Zone 2)	IECEX SIR 08.0032X

## Marking

The equipment shall be marked with the following:

[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.

## Conditions of manufacture

None

## Conditions of Certification/Special Conditions for Safe Use

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

- When the equipment is supplied for incorporation into larger apparatus, it must be installed within an enclosure providing a minimum ingress protection of IP20.
- 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 IEC 60079-11.

- iii. The quoted entity parameters of  $C_o$  and  $L_o$  are applicable for the distributed capacitance and inductance in cable. Where there is circuit capacitance or inductance in the connected equipment (represented by  $C_i$  and  $L_i$  respectively), then these values shall not exceed 50 % of the quoted  $C_o$  and  $L_o$ .
- iv. The safe area connection SK1 must only be connected to Ethernet sources which are not Power over Ethernet (PoE) capable.
- v. Identical connectors are used for the safe area and hazardous area connections. Equipment labelling for correct connections shall be observed.