

9474-ET(G)/BxLAN

MTL intrinsically safe ethernet interface



DECLARATION OF CONFORMITY

A printed version of the Declaration of Conformity has been provided separately within the original shipment of goods. However, you can find a copy of the latest version at -

<http://www.mtl-inst.com/certificates>

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GENERAL SAFETY INFORMATION

Safety instructions for installation and operating personnel

The operating instructions provided here contain **essential safety instructions** for installation personnel and those engaged in the operation, maintenance and servicing of the equipment.



WARNING !

A 'WARNING' marked in this way is provided for operator and plant safety and MUST be followed.

CAUTION !

A Caution is provided to prevent damage to the instrument.

NOTE

These are used to guide the user in the operation of the instrument.

Before commencing installation or commissioning:

- Read and understand the contents of this manual
- Ensure installation and operating personnel have received adequate training for this task
- Ensure that any operating instructions are fully understood by the personnel responsible.
- Observe national and local installation and mounting regulations (e.g. IEC 60079-14).



WARNING !

These assemblies may not be used in explosion-hazard area applications if they have been used previously in general electrical installations.



WARNING !

The responsibility for planning, installation, commissioning, operation and maintenance, particularly with respect to applications in explosion-hazard areas, lies with the plant operator.

During operation:

- Make the relevant instructions available at all times to the operating personnel.
- Observe safety instructions.
- Observe national safety and accident prevention regulations.
- Operate the equipment within its published specification.
- Servicing, maintenance work or repairs not described in this manual must not be performed without prior agreement with the manufacturer.
- Any damage to this equipment may render its explosion protection null and void.
- No changes to any of the components that might impair their explosion protection are permitted.

If any information provided here is not clear:

Contact **Eaton's MTL product line** or an authorised distributor or sales office.

NOTE

Improper installation and operation of the enclosure can result in the invalidation of the guarantee.

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1 DESCRIPTION

The BxLAN is available in several versions to suit different applications.

Boxed Types

- 9474-ET 10/100Mbps Ethernet Interface
- 9474-ETG 10/100/1000Mbps Gigabit Ethernet Interface

OEM PCB Types

- BxLAN 10/100Mbps Ethernet Interface

The two Ethernet LAN ports are provided with RJ45 connectors, the two earth conductors are terminated into screw type terminals. The OEM types may have PCB headers fitted instead of the connectors if the user wishes to mount it directly onto their PCB.

The Gigabit versions are suitable for IIB gas groups, the 100Mbps versions are suitable for IIC gas groups. All versions are suitable for Group I Mining.

2 FEATURES

- Intrinsically Safe 'Ex ia' Group I Mining M1 and Group IIC*/IIB ATEX, UKEX and IECEX Certified for Gas and Dust.
- DIN-rail mounting (cased version)
- OEM version for incorporating into other designs
- Compact dimensions:
(Cased W:72xH:90xD:60mm / OEM W:40xH:78xD:20)
- Operating Temperature:-40°C to +70°C

* Model dependant

3 CONNECTIONS

The Ethernet LAN ports are marked up HAZ and SAFE. The connection going into the Hazardous Area must be plugged into the RJ45 marked HAZ and the Safe Area device is connected to the port marked SAFE.

It is recommended that the RJ45 Cat5e cable that is used for the Hazardous Area LAN connection is Blue in colour to identify this cable as carrying Intrinsically Safe signals and the Safe Area LAN cable be some other colour to avoid any confusion.

Two independent high integrity safety earths are required, this is the same requirement as with any diode safety barrier type device. The conductors used should be 0.75mm² minimum.

4 INSTALLATION



WARNING !

See Special Conditions of Safe Use in the following section regarding
ATEX, UKEX & IECEx Certification Information before installation

- This apparatus must only be installed or replaced by a competent person who must ensure that existing I.S. segregation and earth arrangements are maintained.
- The operating parameters must not exceed those detailed on the certificate.
- Consideration should be given to any possible adverse effects on the polycarbonate enclosure by exposure to any chemicals that may be present in the intended installation environment.
- When using the OEM PCB versions the end equipment should provide a degree of protection of at least IP20. This may be achieved by the enclosure housing the equipment.

NOTE

Both Safety Earths MUST be connected at all times.
Refer to certificate for 'Special Conditions of Safe Use'.

4.1 Special conditions of 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 EN 60079-11
- 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 connect equipment (represented by C_i and L_i respectively), then these values shall not exceed 50% of the quoted C_o and L_o .
- The safe area connection SK1 must only be connected to Ethernet sources which are not Power over Ethernet (PoE) capable.
- Identical connectors are used for the safe area and hazardous area connections. Equipment labelling for correct connections shall be observed.

5 CERTIFICATION

CML 16ATEX2050X
IECEx CML 16.0025X
CML 21UKEX21071X

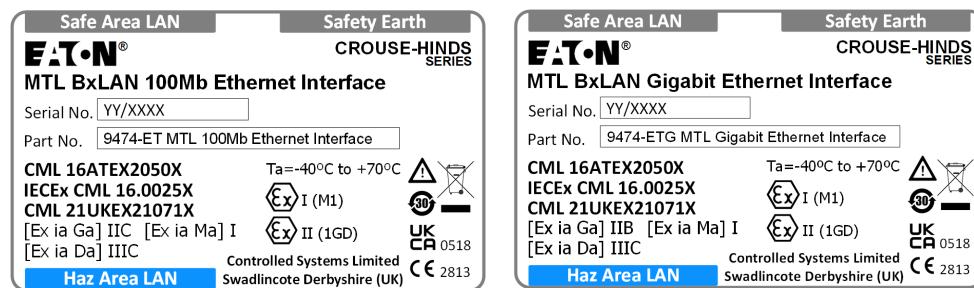
See certificates for further information



Marking

Each device is marked in accordance with the Directive/Statutory Requirements and CE and UKCA marked with the Notified/Approved Body Identification Number.

Example label marking –



6 ATEX, UKEX & IECEx CERTIFICATION INFORMATION

The following information is in accordance with the Essential Health and Safety Requirements (Annex II) of the EU Directive 2014/34/EU [the ATEX Directive- safety of apparatus] and SI 2016 No.1107 [UKEX Statutory Requirements] and is provided for those locations where the ATEX Directive and/or UKEX requirements are applicable.

General

- a) This equipment must only be installed, operated and maintained by competent personnel. Such personnel shall have undergone training, which included instruction on the various types of protection and installation practices, the relevant rules and regulations, and on the general principles of area classification. Appropriate refresher training shall be given on a regular basis. [See clause 4.2 of EN 60079-17].
- b) This equipment has been designed to provide protection against all the relevant additional hazards referred to in Annex II of the directive, such as those in clause 1.2.7. This equipment has been designed to meet the requirements of intrinsically safe electrical apparatus in accordance with EN 60079-0 and EN 60079-11.

Installation

- a) Reference to the IEC code of practice IEC 60079-14. In addition particular industries or end users may have specific requirements relating to the safety of their installations and these requirements should also be met. For the majority of installations the Directive 1999/92/EC [the ATEX Directive- safety of installations] is also applicable.
- b) Unless already protected by design this equipment must be protected by a suitable enclosure against
 - i) mechanical and thermal stresses in excess of those noted in the certification documentation and the product specification.
 - ii) aggressive substances excessive dust moisture and other contaminants
- c) This apparatus is intrinsically safe electrical apparatus and is normally mounted in a hazardous area.

Inspection and maintenance

- a) Inspection and maintenance should be carried out in accordance with European, national and local regulations which may refer to the IEC standard IEC 60079-17. In addition specific industries or end users may have specific requirements which should also be met.
- b) Access to the internal circuitry must not be made during operation.

Repair

This product cannot be repaired by the user and must be replaced with an equivalent certified product.

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