



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

Certificate No.: IECEx BAS 06.0041 issue No.:10

Status: **Current**

Date of Issue: **2016-09-26** Page 1 of 4

Applicant: **Eaton Electric Limited**
Great Marlings
Butterfield
Luton
Bedfordshire
LU2 8DL
United Kingdom

Certificate history:
Issue No. 10 (2016-9-26)
Issue No. 9 (2014-3-28)
Issue No. 8 (2011-11-22)
Issue No. 7 (2011-1-31)
Issue No. 6 (2010-3-11)
Issue No. 5 (2009-5-6)
Issue No. 4 (2008-1-30)
Issue No. 3 (2007-11-12)
Issue No. 2 (2007-7-4)
Issue No. 1 (2007-2-6)

Equipment: **MTL4504 / MTL4511 / MTL4514 / MTL4514B / MTL4516 / MTL4516C / MTL4517 Switch / Proximity Detector Interface**
Optional accessory:

Type of Protection: **Intrinsic Safety**

Marking: **[Ex ia Ga] IIC
[Ex ia Da] IIIC
[Ex ia Ma] I
-20°C ≤ Ta ≤ +60°C**

Approved for issue on behalf of the IECEx Certification Body: R S Sinclair

Position: Technical Manager

Signature:
(for printed version)

Date:

27-9-16

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](http://www.iecex.com).

Certificate issued by:

SGS Baseefa Limited
Rockhead Business Park
Staden Lane
Buxton, Derbyshire, SK17 9RZ
United Kingdom





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Manufacturer: **Eaton Electric Limited**
Great Marlings
Butterfield
Luton
Bedfordshire
LU2 8DL
United Kingdom

Additional Manufacturing location(s):

**MTL Instruments Pvt
Limited**
No 3 Old Mahabalipuram
Road
Sholinganallur
Chennai 600119
India

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/BAS/ExTR06.0061/00
GB/BAS/ExTR07.0120/00
GB/BAS/ExTR10.0296/00
GB/BAS/ExTR16.0237/00

GB/BAS/ExTR07.0012/00
GB/BAS/ExTR08.0009/00
GB/BAS/ExTR11.0295/00

GB/BAS/ExTR07.0071/00
GB/BAS/ExTR10.0026/00
GB/BAS/ExTR14.0065/00

Quality Assessment Report:

GB/BAS/QAR06.0022/06

GB/BAS/QAR07.0017/05



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The MTL4504 / MTL4511 / MTL4514 / MTL4514B / MTL4516 / MTL4516C / MTL4517 Switch / Proximity Detector Interface are designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to up to two intrinsically safe circuits by limitation of voltage and current. Relays and a transformer provide galvanic isolation between the hazardous and non-hazardous area circuitry.

Each channel of the interface monitors either a detector or switch located in the hazardous area and controls non-hazardous area loads via relays. Some models of the interface are fitted with independent phase reverse controls and Line Fault Detection (LFD) circuitry allow an alarm condition to be signalled for either state, set by switches on the side of the interface.

The apparatus comprises an isolating transformer, relays, zener diodes and current limiting resistors to provide voltage and current limitation on each channel. These, together with other electronic components are mounted on a single printed circuit board and housed in a plastic enclosure. Polarised plugs and sockets are provided for connection to the hazardous and non-hazardous area. LED indication is provided to indicate Power-on, state of the outputs and LFD status.

The above listed models are all built on a common printed circuit board. The differences between the models relates to the configuration of relays and non-hazardous area connections.

See annex for model and electrical data.

CONDITIONS OF CERTIFICATION: NO



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Variation 10.1

To permit the manufacturer's name to be changed on the certificate and equipment marking. No other changes are made to the equipment design.

ExTR: GB/BAS/ExTR16.0237/00

File Reference: 16/0371

MTL4504 / MTL4511 / MTL4514 / MTL4514B / MTL4516 / MTL4516C / MTL4517 Switch / Proximity Detector Interface

Model Range:

| Model No. | |
|-----------|---|
| MTL4504 | Single Channel Switch / Proximity Detector Interface with Line Fault Detection (LFD) & Phase Reversal |
| MTL4511 | Single Channel Switch / Proximity Detector Interface |
| MTL4514 | Single Channel Switch / Proximity Detector Interface with Line Fault Detection (LFD) Alarm |
| MTL4514B | Single Channel Switch / Proximity Detector Interface with Line Fault Detection (LFD) & Phase Reversal |
| MTL4516 | Two Channel Switch / Proximity Detector Interface |
| MTL4516C | Two Channel Switch / Proximity Detector Interface |
| MTL4517 | Two Channel Switch / Proximity Detector Interface with Line Fault Detection (LFD) Alarm |

Non-Hazardous Area Terminals 7 to 14

$$U_m = 253V \text{ r.m.s.}$$

The circuit connected to non-hazardous area terminals 13 & 14 is designed to operate from a d.c. supply voltage of up to 35V.

Non-hazardous area terminals 7 to 12 are connected to relay contacts which can switch up to 253V r.m.s, 2A r.m.s. and 100VA.

Hazardous Area Terminals 1 w.r.t. 2 / 3 (Channel 1)
Hazardous Area Terminals 4 w.r.t. 5 / 6 (Channel 2)*

$$\begin{aligned} U_o &= 10.5V & C_i &= 0 \\ I_o &= 14mA & L_i &= 0 \\ P_o &= 37mW \end{aligned}$$

* For MTL4516, MTL4516C & MTL4517 Models only

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

| GROUP | CAPACITANCE (μ F) | INDUCTANCE (mH) | OR | L/R RATIO (μ H/ohm) |
|-------|---------------------------|--------------------|----|-----------------------------|
| IIC | 2.41 | 175 | | 983 |
| IIB** | 16.8 | 680 | | 1,333 |
| IIA | 75.0 | 1,000 | | 1,333 |
| I | 95.0 | 1,000 | | 1,333 |

** Group IIB parameters also applicable for associated apparatus [Ex ia Da] IIIC

Notes:

- 1) The above load parameters apply when one of the two conditions below is given:
 - the total L_i of the external circuit (excluding the cable) is < 1% of the L_o value or
 - the total C_i of the external circuit (excluding the cable) is < 1% of the C_o value.

- 2) The above parameters are reduced to 50% when both of the two conditions below are given:
- the total L_i of the external circuit (excluding the cable) is $\geq 1\%$ of the L_o value and
 - the total C_i of the external circuit (excluding the cable) is $\geq 1\%$ of the C_o value.

The reduced capacitance of the external circuit (including cable) shall not be greater than $1\mu\text{F}$ for Groups IIB, IIA & I and 600nF for Group IIC.