



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 08.0031 issue No.:5

Status: **Current**

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

Certificate history:
Issue No. 5 (2016-9-26)
Issue No. 4 (2014-4-25)
Issue No. 3 (2014-3-28)
Issue No. 2 (2011-1-31)
Issue No. 1 (2009-5-6)
Issue No. 0 (2008-7-16)

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

Equipment: **MTL4501-SR Failsafe 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
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/ExTR08.0065/00
GB/BAS/ExTR14.0133/00

GB/BAS/ExTR11.0001/00
GB/BAS/ExTR16.0237/00

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 MTL4501-SR Failsafe Switch / Proximity Detector Interface is designed to provide an interface between unspecified non-hazardous area apparatus and an intrinsically safe circuit in the hazardous area. The apparatus is intended to provide a galvanically isolated fail-safe safe-area output whilst monitoring a fail-safe proximity switch detector located in the hazardous area. Line Fault Detection (LFD) in the apparatus is provided by volt-free relay contact output on the non-hazardous area side of the apparatus. Two transformers and a relay provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The apparatus comprises two isolating transformers, a relay, fuses, zener diodes and resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a printed circuit board and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. LED indication is provided for power-on, the output status and line fault detection.

See Annex for electrical data.

CONDITIONS OF CERTIFICATION: NO



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

Variation 5.1

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

MTL4501-SR Failsafe Switch / Proximity Detector Interface

Non-Hazardous Area Terminals 7, 8, 10, 11, 13 & 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.

The non-hazardous area terminals 10 & 11 are connected to relay contacts which can switch up to 253V r.m.s, 2A r.m.s. and 100VA.

Hazardous Area Terminals 1 & 2

$U_o = \pm 9.7V$ $C_i = 0$
 $I_o = 30mA$ $L_i = 0$
 $P_o = 0.07W$

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 (μF) | INDUCTANCE (mH) | OR | L/R RATIO ($\mu H/ohm$) |
|-------|----------------------------|--------------------|----|------------------------------|
| IIC | 3.5 | 39 | | 475 |
| IIB* | 24 | 145 | | 1,829 |
| IIA | 170 | 299 | | 3,093 |
| I | 320 | 501 | | 6,414 |

* 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 μF for Groups IIB, IIA & I and 600nF for Group IIC.