



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 15.0138 Issue No: 1 Certificate history:
Status: **Current** Page 1 of 4 [Issue No. 1 \(2016-09-26\)](#)
Date of Issue: **2016-09-26** [Issue No. 0 \(2016-03-14\)](#)

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

Equipment: **MTL4582B Resistance Isolator**
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:

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:

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/ExTR15.0300/00](#) [GB/BAS/ExTR16.0237/00](#)

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 MTL4582B Resistance Isolator is designed to restrict the transfer of energy from unspecified non-hazardous area equipment to a Resistance Temperature Device (RTD) or other resistance located in the hazardous area by limitation of voltage and current. A transformer and opto-isolator provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL4582B Resistance Isolator is designed for the connection to a 2-wire, 3-wire or 4-wire RTD or other resistance situated in the hazardous area. The equipment repeats the resistance on the non-hazardous area output terminals for connection to a monitoring system.

The equipment comprises an isolating transformer, opto-isolator, duplicated zener diodes and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a single printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. A jack socket is provided for connection of a suitably certified data terminal for programming the equipment. An LED is fitted to provide power on indication.

See Certificate Annex for electrical parameters.

CONDITIONS OF CERTIFICATION: NO



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

Variation 1.1

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
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Annex:

[IECEX BAS 15.0138 Annex Issue 0.pdf](#)

MTL4582B Resistance Isolator

Input / Output Parameters

Non-Hazardous Area Terminals 8, 9, 11, 12, 13 & 14

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

The circuit connected to non-hazardous area terminals 8, 9, 11, 12, 13 & 14 is designed to operate from a d.c. supply voltage of up to 35V.

Hazardous Area Terminals 1, 3, 4 & 5

$$\begin{aligned} U_o &= 6.51V & C_i &= 0 \\ I_o &= 10mA & L_i &= 0 \\ P_o &= 16.1mW \end{aligned}$$

Hazardous Area Terminals 1, 3 & 4

$$\begin{aligned} U_o &= 6.51V & C_i &= 0 \\ I_o &= 6mA & L_i &= 0 \\ P_o &= 9.2mW \end{aligned}$$

Hazardous Area Terminals 3 w.r.t. 1

$$\begin{aligned} U_o &= 1.2V & U_i &= 5V \\ I_o &= 4mA & C_i &= 0 \\ P_o &= 1.2mW & L_i &= 0 \end{aligned}$$

Although the equipment does not comply with the simple apparatus requirements of Clause 5.7 of IEC 60079-11: 2011, when terminals 3 w.r.t. 1 are connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface will not add more than the values specified in Clause 5.7 of IEC 60079-11: 2011 to the parameters of the circuit into which it is connected.

Programming / Configuration Port (Jack Socket)

$$\begin{aligned} U_o &= 6.68V & U_i &= 9.1V \\ I_o &= 12mA & C_i &= 0 \\ P_o &= 17.7mW & L_i &= 0 \end{aligned}$$

Load Parameters

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

GROUP	CAPACITANCE (μ F)	INDUCTANCE (mH)	OR	L/R RATIO (μ H/ohm)
Hazardous area terminals 1, 3, 4 & 5				
IIC	22.0	355.5		1,536
IIB*	500	1,000		1,536
IIA	1,000	1,000		1,536
I	1,000	1,000		1,536

GROUP	CAPACITANCE (μ F)	INDUCTANCE (mH)	OR	L/R RATIO (μ H/ohm)
Hazardous area terminals 1, 3 & 4				
IIC	22.0	987.6		921
IIB*	500	1,000		921
IIA	1,000	1,000		921
I	1,000	1,000		921
Hazardous area terminals 3 w.r.t. 1				
IIC	100	1,000		3,333
IIB*	1,000	1,000		3,333
IIA	1,000	1,000		3,333
I	1,000	1,000		3,333
Programming / Configuration Port (Jack Socket)				
IIC	0.478	79.4		448
IIB*	2.88	317.9		1,412
IIA	11.6	635.8		1,412
I	15.8	1,000		1,412

* 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 1μ F for Groups IIB, IIA & I and 600nF for Group IIC.