

1 **UK-TYPE EXAMINATION CERTIFICATE**

2 **Safety Device, Controlling Device or Regulating Device intended for use outside a potentially explosive atmosphere but required for or contributing to the safe functioning of Product and Protective Systems with respect to the risks of explosion**  
3 **UKSI 2016:1107 (as amended) – Schedule 3A, Part 1**

3 UK-Type Examination Certificate Number: **BAS21UKEX0464**

4 Product: **MTL5582B Resistance Isolator**

5 Manufacturer: **Eaton Electric Limited**

6 Address: **Great Marlings, Butterfield, Luton, Bedfordshire, LU2 8DL**

7 This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 SGS Baseefa, Approved Body number 1180, in accordance with Regulation 43 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in confidential Report No. **21(C)0386/16**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN IEC 60079-0:2018 EN 60079-11:2012**

except in respect of those requirements listed at item 18 of the Schedule.

10 If the sign “X” is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

11 This UK-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

12 The marking of the product shall include the following:

⊗ II (1) GD [Ex ia Ga] IIC (-20°C ≤ Ta ≤ +60°C)  
[Ex ia Da] IIIC (-20°C ≤ Ta ≤ +60°C)

⊗ I (M1) [Ex ia Ma] I (-20°C ≤ Ta ≤ +60°C)

SGS Baseefa Customer Reference No. **0703**

Project File No. **21/0386**

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R S SINCLAIR  
TECHNICAL MANAGER  
On behalf of SGS Baseefa Limited

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## Schedule

14

Certificate Number BAS21UKEX0464

### 15 Description of Product

The MTL5582B 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 MTL5582B 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.

#### Input / Output Parameters

##### Non-hazardous Area Terminals 9, 10, 11, 12, 13 & 14

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

The apparatus is designed to operate on non-hazardous area terminals 9, 10, 11, 12, 13 & 14 from a d.c. supply voltage of up to 35V.

##### Hazardous Area Terminals 1, 3, 4 & 5

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

##### Hazardous Area Terminals 1, 3 & 4

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

##### Hazardous Area Terminals 3 w.r.t. 1

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

Although the apparatus does not comply with the simple apparatus requirements of Clause 5.7 of EN 60079-11: 2012, 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 EN 60079-11: 2012 to the parameters of the circuit into which it is connected.

##### Programming / Configuration Port (Jack Socket)

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

Load Parameters

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

GROUP	CAPACITANCE ( $\mu\text{F}$ )	INDUCTANCE (mH)	OR	L/R RATIO ( $\mu\text{H}/\text{ohm}$ )
Hazardous area terminals 1, 3, 4 & 5				
IIC	22.0	61.2		894
IIB*	500	244.8		3,576
IIA	1,000	489.7		3,651
I	1,000	803.4		3,651
Hazardous area terminals 1, 3 & 4				
IIC	22.0	71.4		966
IIB*	500	285.9		3,378
IIA	1,000	571.9		3,378
I	1,000	938.4		3,378
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:

- 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.
- 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  $600\text{nF}$  for Group IIC.

**16 Report Number**

21(C)0386/16

**17 Specific Conditions of Use**

None

## 18 Essential Health and Safety Requirements

In addition to the Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause	Subject	Compliance
13	Protection against other hazards (LVD type requirements, etc.)	Manufacturer responsibility
14	Overloading of equipment (protection relays, etc.)	User/Installer responsibility
22(1)	External effects	User/Installer responsibility
22(2)	Aggressive substances, etc.	User/Installer responsibility

## 19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI5582B-1	1 of 1	3	8.21	MTL5582B Certification Label Details and DIN rail fittings - Baseefa

This drawing is held with BAS21UKEX0464.

For other current drawings not re-submitted for this assessment, see Baseefa15ATEX0196.