

1 **EU - 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 Equipment and Protective Systems with respect to the risks of explosion**
Directive 2014/34/EU

3 EU - Type Examination Certificate **Baseefa14ATEX0158 – Issue 2**
Number:

3.1 In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

4 Product: **MTL5573 Temperature Converter**

5 Manufacturer: **Eaton Electric Limited**

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

7 This re-issued certificate extends EC Type Examination Certificate No. Baseefa14ATEX0158 to apply to product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8 SGS Baseefa, Notified Body number 1180, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 Annex II to the Directive.

The examination and test results are recorded in confidential Report No. See Certificate History

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

EN 60079-0: 2012 + A11: 2013 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 EU - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Directive 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 ≤ T_a ≤ +60°C)
[Ex ia Da] IIIC (-20°C ≤ T_a ≤ +60°C)

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

SGS Baseefa Customer Reference No. **0703**

Project File No. **16/0371**

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R S SINCLAIR (P. SINCLAIR)
TECHNICAL MANAGER

On behalf of SGS Baseefa Limited

13 **Schedule**

14 **Certificate Number Baseefa14ATEX0158 – Issue 2**

15 **Description of Product**

The MTL5573 Temperature Converters are designed to restrict the transfer of energy from unspecified non-hazardous area equipment to either thermocouples or RTD's 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 MTL5573 Temperature Converters are designed for connection to thermocouples or two, three or four wire RTD's situated in the hazardous area. The apparatus converts the low level d.c. signal from the sensor mounted in the hazardous area into a 4/20mA current for driving a load in the non-hazardous area. An optional cold junction compensation (CJC) plug can be fitted to the hazardous area connections which alters the internal connections and affects the output parameters.

The equipment comprises an isolating transformer, an opto-isolator, duplicated zener diode chains and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a 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 the connection of a suitably certified data terminal for programming the equipment.

Input / Output Parameters

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

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

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

Hazardous Area Terminals 1 to 6 (forming part of the same intrinsically safe circuit)

$$\begin{array}{ll} U_o = 6.6V & C_i = 0 \\ I_o = 76mA & L_i = 0 \\ P_o = 0.13W & \end{array}$$

Hazardous Area Terminals 3 w.r.t. 1 (WITHOUT the Cold Junction Compensation (CJC) plug fitted)

$$\begin{array}{ll} U_o = 1.1V & C_i = 0 \\ I_o = 7mA & L_i = 0 \\ P_o = 2mW & \end{array}$$

Hazardous Area Terminals 3, 2 & 1 (with or without CJC plug fitted)

$$\begin{array}{ll} U_o = 6.6V & C_i = 0 \\ I_o = 10mA & L_i = 0 \\ P_o = 17mW & \end{array}$$

Programming / Configuration Port (Jack Socket)

$$\begin{array}{ll} U_o = 8V & U_i = 9.1V \\ I_o = 14.6mA & \\ P_o = 26mW & \\ C_i = 0 & \\ L_i = 0 & \end{array}$$

The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the hazardous area load connected to hazardous area terminals 1 to 6 and the programming / configuration port must not exceed the following values:

GROUP	CAPACITANCE (μF)	INDUCTANCE (mH)	OR	L/R RATIO ($\mu\text{H}/\text{ohm}$)
Hazardous Area Terminals 1 to 6				
IIC	22	6.42		288
IIB**	500	25.6		1,057
IIA	1,000	53.0		2,228
I	1,000	77.2		3,402
Programming / Configuration Port (Jack Socket)				
IIC	0.367	153		349
IIB**	2.15	591		1,355
IIA	8.8	1,000		1,453
I	12.32	1,000		1,453

** 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.

16 Report Number

GB/BAS/ExTR16.0238/00

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
1.2.7	Protection against other hazards (LVD type requirements, etc.)	Manufacturer responsibility
1.2.8	Overloading of equipment (protection relays, etc.)	User/Installer responsibility
1.4.1	External effects	User/Installer responsibility
1.4.2	Aggressive substances, etc.	User/Installer responsibility

19 Drawings and Documents

New drawings submitted for this issue of certificate:

Number	Sheet	Issue	Date	Description
CI5573-5	1 of 1	2	7.16	MTL5573 Certification Label Details & DIN Rail Fittings – Baseefa – Ex i

The above drawing is associated and held with IECEx BAS 14.0082 Iss. 2

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
CI4573-1	1 of 1	2	10.14	Circuit Diagram for MTL4573
CI4573-2	1 to 3	2	10.14	MTL4573 Parts List
CI4573-3	1 of 1	2	10.14	MTL4573 Track Layout
CI4573-4	1 & 2	2	10.14	MTL4573 Component Layout
CI4573-6	1 of 1	1	10.13	PCB Detail for TPL301
CI5500-100	1 of 1	3	1.13	New 5500 Outline

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 14.0082

20 Certificate History

Certificate No.	Date	Comments
Baseefa14ATEX0158	2 July 2014	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0: 2012 and EN 60079-11: 2012 is documented in Certification Test Report No. GB/BAS/ExTR14.0163/00.
Baseefa14ATEX0158/1	13 November 2014	To permit minor circuit and PCB changes not affecting the original assessment. The associated assessment is documented in Certification Report No. GB/BAS/ExTR14.0323/00.
Baseefa14ATEX0158 Issue 2	5 October 2016	This issue of the certificate incorporates previously issued primary & supplementary certificates into one certificate and confirms the current designs meet the requirements of EN 60079-0: 2012 + A11: 2013 & EN 60079-11: 2012. The certificate also permits the manufacturer's name to be changed on page 1 of the certificate and on the equipment marking. The associated assessment is documented in Certification Report No. GB/BAS/ExTR16.0238/00.

For drawings applicable to each issue, see original of that issue.