

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 Number: **Baseefa06ATEX0158 – Issue 7**

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: **MTL4549, MTL4549C & MTL4549Y 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters**

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. Baseefa06ATEX0158 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 (I) 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**

This document is issued by the Company subject to its General Conditions for Certification Services accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and the Supplementary Terms and Conditions accessible at <http://www.sgs.com/SGSBaseefa/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. It does not necessarily indicate that the equipment may be used in particular industries or circumstances. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, schedule included, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS Baseefa Limited

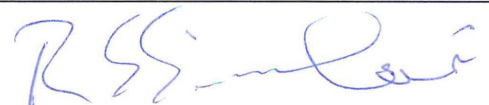
Rockhead Business Park, Staden Lane,
Buxton, Derbyshire SK17 9RZ

Telephone +44 (0) 1298 766600 Fax +44 (0) 1298 766601

e-mail baseefa@sgs.com web site www.sgs.co.uk/baseefa

Registered in England No. 4305578.

Registered address: Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN



R S SINCLAIR

TECHNICAL MANAGER

On behalf of SGS Baseefa Limited

13

Schedule

14

Certificate Number Baseefa06ATEX0158 – Issue 7

15 Description of Product

The MTL4549, MTL4549C & MTL4549Y 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters accepts up to two separate 4/20mA signals from controllers located in the non-hazardous area to drive loads in the hazardous area. It permits bi-directional transmission of digital signals to and from an operator station or hand-held communicator. The apparatus restricts the transfer of energy from unspecified non-hazardous area apparatus to intrinsically safe circuit by limitation of voltage and current. Three transformers on each channel provide galvanic isolation between the hazardous and non-hazardous area circuitry.

Each channel of the apparatus comprises a power transformer, two current transformers, zener diodes and current limiting 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.

The MTL4549, MTL4549C & MTL4549Y models in terms of intrinsic safety are identical. The difference between them is the MTL4549C & MTL4549Y have the Line Fault Detection (LFD) facility disabled.

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 are designed to operate from a d.c. supply voltage up to 35V.

Hazardous Area Terminals 2 w.r.t. 1 (Channel 1)

Or

Hazardous Area Terminals 5 w.r.t. 4 (Channel 2)

$$\begin{aligned} U_o &= 28V \\ I_o &= 93mA \\ P_o &= 0.65W \\ C_i &= 0 \\ L_i &= 0 \end{aligned}$$

Each channel must be considered as a separate intrinsically safe circuit

Load Parameters

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

GROUP	CAPACITANCE (μ F)	INDUCTANCE (mH)	OR	L/R RATIO (μ H/ohm)
IIC	0.083	4.2		56
IIB*	0.65	12.6		210
IIA	2.15	33.6		444
I	3.76	53.7		668

* 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/ExTR16.0237/00

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
CI4549-1	8 of 8	5	7.16	MTL4549 Certification Label Details – Baseefa

The above drawings are associated and held with IECEx BAS 06.0036 Iss. 8

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
CI4549-1	1 of 8	2	7.08	Parts List for MTL4549
CI4549-1	2 of 8	4	07-08	Circuit Diagram for MTL4549
CI4549-1	3 of 8	4	07-08	Circuit Diagram for MTL4549
CI4549-1	4 of 8	3	11.07	MTL4549 Track Layout
CI4549-1	5 of 8	6	1.13	MTL4549 Component Layout
CI4549-1	6 of 8	2	1.07	PCB Detail for TPL300 and TPL302
CI4549-1	7 of 8	2	1.07	PCB Detail for TPL301
CI4500-3	1 of 1	1	12.10	MTL4500 & MTL5500 – Alternative Zener Diodes (Panjit)
CI4500-6	1 of 1	1	20.12.10	MTL4500 & MTL5500 – Conformal Coating
CI4500-100	1 of 1	2	1.13	MTL4500 Case

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 06.0036

20 Certificate History

Certificate No.	Date	Comments
Baseefa06ATEX0158	16 November 2006	The release of the prime certificate. The associated test and assessment against the requirements of EN 60079-0: 2004, EN 50020: 2002, IEC 61241-0: 2004 and IEC 61241-11: 2005 is documented in Certification Report No. 05(C)0863/6.
Baseefa06ATEX0158/1	31 January 2007	To permit minor changes to the transformer PCB's not affecting the original assessment.
Baseefa06ATEX0158/2	4 July 2007	To permit minor changes to the circuit design and the layout of the PCB.
Baseefa06ATEX0158/3	20 December 2007	<ul style="list-style-type: none"> i) To permit minor changes to the PCB layout not affecting the original assessment. ii) To permit minor drawing changes not affecting the original assessment. iii) To confirm the current design of the equipment meets the requirements of EN 60079-0: 2006 and EN 60079-11: 2007. <p>The associated test and assessment is documented in Certification Report No. GB/BAS/ExTR07.0124/00.</p>
Baseefa06ATEX0158/4	15 July 2008	<p>To permit minor component changes to the current design to form the MTL4549Y 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters.</p> <p>The associated test and assessment is documented in Certification Report No. GB/BAS/ExTR08.0146/00.</p>
Baseefa06ATEX0158/5	31 January 2011	<ul style="list-style-type: none"> i) To permit the alternative fitting of 1SMB3EZ** zener diodes in place of 1SMB59**BT3 components currently fitted. ii) An alternative method of applying the conformal coating to the PCB fitted in the equipment not affecting the original assessment. iii) To confirm the current designs of the MTL4549, MTL4549C & MTL4549Y 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters have been reviewed against the requirements of EN 60079-0: 2009 in respect of the differences from EN 60079-0: 2006, and with exception of the marking, none of the differences affect the equipment. In accordance with the requirements of EN 60079-0: 2009, the equipment markings were revised to include the Equipment Protection Level (EPL) markings. <p>The associated test and assessment is documented in Certification Report No. GB/BAS/ExTR10.0297/00.</p>

Certificate No.	Date	Comments
Baseefa06ATEX0158/6	5 March 2014	<p>i) Minor component and drawing changes not affecting the original assessment.</p> <p>ii) To confirm the current designs of the MTL4549, MTL4549C & MTL4549Y 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters have been reviewed against the requirements of EN 60079-0: 2012 and EN 60079-11: 2012 in respect of the differences from EN 60079-0: 2009, EN 60079-11: 2007 & EN 61241-11: 2006 and none of the differences affect the equipment. In accordance with EN 60079-11: 2012, the Group I capacitive load parameters were corrected and the associated load parameter notes were updated.</p> <p>The associated test and assessment is documented in Certification Report No. GB/BAS/ExTR14.0043/00.</p>
Baseefa06ATEX0158 Issue 7	26 September 2016	<p>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.</p> <p>The equipment name on page 1 of the certificate was revised to include reference to the MTL4549Y model.</p> <p>The certificate also permits the manufacturer's name to be changed on page 1 of the certificate and on the equipment marking.</p> <p>The associated assessment is documented in Certification Report No. GB/BAS/ExTR16.0237/00.</p>
For drawings applicable to each issue, see original of that issue.		