

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 **Baseefa15ATEX0003 – 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: **MTL4521Y, MTL4521YL, MTL4523Y & MTL4523YL Solenoid / Alarm Drivers**

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. Baseefa15ATEX0003 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

R S SINCLAIR
TECHNICAL MANAGER
On behalf of SGS Baseefa Limited

13

Schedule

14

Certificate Number Baseefa15ATEX0003 – Issue 2

15 Description of Product

The MTL4521Y, MTL4521YL, MTL4523Y & MTL4523YL Solenoid / Alarm Drivers are designed to control and monitor a device located in the hazardous area and restrict the transfer of energy from unspecified equipment in the non-hazardous area to an intrinsically safe circuit in the hazardous area by the limitation of voltage and current. Opto-isolators and a transformer provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The equipment comprises an isolating transformer, opto-isolators, 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.

The MTL4521Y, MTL4521YL, MTL4523Y & MTL4523YL Solenoid / Alarm Drivers are built on a common PCB with different components fitted to give certain output parameters and features. The MTL4521Y & MTL4521YL are loop-powered Solenoid / Alarm Drivers, with the only difference between the models being the current limitation fitted on the hazardous area connections. The MTL4523Y and MTL4523YL variants are similar but are bus powered and have additional Line Fault Detection (LFD) circuitry populated. All models have LED indication fitted dependent on the model indicating output status, Power on and LFD status where applicable.

Input / Output Parameters

MTL4521Y & MTL4523Y Models Parameters

Non-Hazardous Area Terminals 7 to 14

$$U_m = 253V$$

The apparatus is designed to operate on the above terminals from a d.c. supply voltage of up to 35V.

Hazardous Area Terminals 2 / 3 w.r.t. 1

$$\begin{aligned}U_o &= 25V \\I_o &= 147mA \\P_o &= 0.92W \\C_i &= 0 \\L_i &= 0\end{aligned}$$

Load Parameters

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	0.11	1.4		40
IIB**	0.84	7.2		159
IIA	2.97	14.4		328
I	4.87	20.2		478

*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.

MTL4521YL & MTL4523YL Models Parameters

Non-Hazardous Area Terminals 7 to 14

$$U_m = 253\text{V}$$

The apparatus is designed to operate on the above terminals from a d.c. supply voltage of up to 35V.

Hazardous Area Terminals 2 / 3 w.r.t. 1

$$\begin{aligned}U_o &= 25\text{V} \\I_o &= 108\text{mA} \\P_o &= 0.68\text{W} \\C_i &= 0 \\L_i &= 0\end{aligned}$$

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 ($\mu\text{H}/\text{ohm}$)
IIC	0.11	3.04	52
IIB*	0.84	12.19	210
IIA	2.97	24.38	421
I	4.87	40.0	691

*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
CI4521Y-6	1 of 1	2	7.16	MTL4521Y Certification Label Details – Baseefa – Ex i

The above drawing is associated and held with IECEx BAS 15.0001 Iss. 2

Current drawings which remain unaffected by this issue:

Number	Sheet	Issue	Date	Description
CI4500-100	1 of 1	2	1.13	MTL 4500 Case
CI4521Y-1	1 & 2	2	9.15	Circuit Diagram for MTL4521Y
CI4521Y-2	1 to 4	2	9.15	MTL4521Y Parts List
CI4521Y-3	1 of 1	1	8.14	MTL4521Y Track Layout
CI4521Y-4	1 of 1	2	9.15	MTL4521Y Component Layout
CI4521Y-5	1 of 1	1	8.14	PCB Detail for TPL301

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 15.0001

20 Certificate History

Certificate No.	Date	Comments
Baseefa15ATEX0003	12 February 2015	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/ExTR15.0001/00.
Baseefa15ATEX0003/1	28 October 2015	i) To permit minor circuit changes not affecting the original assessment. ii) To confirm the current designs of the MTL4521Y, MTL4521YL, MTL4523Y & MTL4523YL Solenoid / Alarm Drivers have been reviewed against the requirements of EN 60079-0: 2012 + A11: 2013 in respect of the differences from EN 60079-0: 2012, and none of the differences affect the equipment. The associated assessment is documented in Certification Report No. GB/BAS/ExTR15.0284/00.

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Certificate No.	Date	Comments
Baseefa15ATEX0003 Issue 2	26 September 2016	This issue of the certificate 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/ExTR16.0237/00.
For drawings applicable to each issue, see original of that issue.		