



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 07.0070	issue No.:	7	Certificate history: Issue No. 7 (2017-4-4) Issue No. 6 (2016-10-5) Issue No. 5 (2013-1-31) Issue No. 4 (2012-8-6) Issue No. 3 (2011-1-31) Issue No. 2 (2009-5-6) Issue No. 1 (2008-11-24) Issue No. 0 (2007-11-15)
Status:	Current			
Date of Issue:	2017-04-04	Page 1 of 4		
Applicant:	Eaton Electric Limited Great Marlings Butterfield Luton Bedfordshire LU2 8DL United Kingdom			
Equipment:	MTL5546 / MTL5546Y / MTL5546Y-T Single Channel Isolating Driver, 4/20mA for Smart I/P Converters			
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 - MTL5546 & MTL5546Y Models -20°C ≤ Ta ≤ +65°C - MTL5546Y-T Model only			
Approved for issue on behalf of the IECEx Certification Body:	R S Sinclair	PP DBREANLEY		
Position:	Technical Manager			
Signature: (for printed version)				
Date:	4/4/17			

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](http://www.iecex.com).

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
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/ExTR07.0130/00
GB/BAS/ExTR12.0181/00
GB/BAS/ExTR17.0086/00

GB/BAS/ExTR08.0216/00
GB/BAS/ExTR13.0014/00

GB/BAS/ExTR10.0297/00
GB/BAS/ExTR16.0238/00

Quality Assessment Report:

GB/BAS/QAR06.0022/06

GB/BAS/QAR07.0017/06



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The MTL5546 / MTL5546Y Single Channel Isolating Driver, 4/20mA for Smart I/P Converters accepts a 4/20mA signal from a controller located in the non-hazardous area to drive a load 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 an intrinsically safe circuit by limitation of voltage and current. Three transformers provide galvanic isolation between the hazardous and non-hazardous area circuitry.

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 MTL5546 & MTL5546Y models in terms of intrinsic safety are identical. The difference between them is the MTL5546Y has the Line Fault Detection (LFD) facility disabled.

The MTL5546Y-T Single Channel Isolating Driver, 4/20mA for Smart I/P Converters is of a similar construction to the MTL5546Y variant of the equipment with the same input and output parameters, but has an extended ambient temperature range.

See annex for electrical data.

SPECIFIC CONDITIONS OF USE: NO



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

Variation 7.1

To permit the addition of the MTL5546Y-T Single Channel Isolating Driver, 4/20mA for Smart I/P Converters to the range covered by the certificate. The MTL5546Y-T is of similar construction to the MTL5546Y variant and has the same input and output parameters, but has an extended ambient temperature range of -20°C to +65°C.

The Equipment Title, Marking section and Schedule was revised to detail the new variant of the equipment. The Certificate Annex (now Issue 3) was updated to list the new variant.

ExTR: GB/BAS/ExTR17.0086/00

File Reference: 17/0164

MTL5546, MTL5546Y & MTL5546Y-T Single Channel Isolating Driver, 4/20mA for Smart I/P Converters

Non-Hazardous Area Terminals 11 to 14

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

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

Hazardous Area Terminals 2 w.r.t. 1

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

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 (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

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.

* Group IIB parameters also applicable for associated apparatus [Ex ia Da] IIIC