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 07.0067 issue No.:8

Status: **Current**

Date of Issue: **2017-04-03** Page 1 of 4

Certificate history:
Issue No. 8 (2017-4-3)
Issue No. 7 (2016-10-5)
Issue No. 6 (2014-3-28)
Issue No. 5 (2011-11-22)
Issue No. 4 (2011-1-31)
Issue No. 3 (2010-3-11)
Issue No. 2 (2009-5-6)
Issue No. 1 (2008-1-30)
Issue No. 0 (2007-11-12)

Applicant:
Eaton Electric Limited
Great Marlings
Butterfield
Luton
Bedfordshire
LU2 8DL
United Kingdom

Equipment: **MTL5511 / MTL5514 / MTL5514-T / MTL5516C / MTL5517 Switch / Proximity Detector Interface**

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 - MTL5511/14/16C/17 Models
-20°C ≤ Ta ≤ +65°C - MTL5514-T Model only

Approved for issue on behalf of the IECEx Certification Body: R S Sinclair PP DBREARLEY

Position: Technical Manager

Signature:
(for printed version)

Date: 3/4/17

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.

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 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*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/ExTR07.0127/00
GB/BAS/ExTR08.0009/00
GB/BAS/ExTR10.0026/00
GB/BAS/ExTR10.0296/00
GB/BAS/ExTR11.0295/00
GB/BAS/ExTR14.0065/00
GB/BAS/ExTR16.0238/00
GB/BAS/ExTR17.0096/00

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 MTL5511 / MTL5514 / MTL5514-T / MTL5516C / MTL5517 Switch / Proximity Detector Interface are designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to up to two intrinsically safe circuits by limitation of voltage and current. A transformer and relays provide galvanic isolation between the hazardous and non-hazardous area circuitry.

Each channel of the interface monitors either a detector or switch located in the hazardous area and controls non-hazardous area loads via relays. Some models of the interface are fitted with independent phase reverse controls and Line Fault Detection (LFD) circuitry allow an alarm condition to be signalled for either state, set by switches on the side of the interface.

The apparatus comprises an isolating transformer, relays, zener diodes and current limiting resistors to provide voltage and current limitation on each channel. These, together with other electronic components are mounted on a single printed circuit board and housed in a plastic enclosure. Polarised plugs and sockets are provided for connection to the hazardous and non-hazardous area. LED indication is provided to indicate Power-on, state of the outputs and LFD status.

The above listed models are all built on a common printed circuit board. The differences between the models relate to the configuration of relays and non-hazardous area connections.

The MTL5514-T Single Channel Switch / Proximity Detector Interface with Line Fault Detection (LFD) Alarm is of similar construction to the MTL5514 variant of the equipment with the same input and output parameters, but has an extended ambient temperature range.

See annex for model and electrical data.

SPECIFIC CONDITIONS OF USE: NO

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

Variation 8.1

To permit the addition of the MTL5514-T Single Channel Switch / Proximity Detector Interface with Line Fault Detection (LFD) Alarm to the range covered by the certificate. The MTL5514-T is of similar construction to the MTL5514 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/ExTR17.0096/00**	File Reference: **17/0165**

Annex: IECEx BAS 07.0067 Annex Issue 3.pdf

SGS Baseefa Limited
Rockhead Business Park
Staden lane, Buxton, Derbyshire
SK17 9RZ
United Kingdom

MTL5511 / MTL5514 / MTL5514-T / MTL5516C / MTL5517 Switch / Proximity Detector Interface

Model Range:

Model No.	
MTL5511	Single Channel Switch / Proximity Detector Interface
MTL5514	Single Channel Switch / Proximity Detector Interface with Line Fault Detection (LFD) Alarm
MTL5514-T	Single Channel Switch / Proximity Detector Interface with Line Fault Detection (LFD) Alarm
MTL5516C	Two Channel Switch / Proximity Detector Interface
MTL5517	Two Channel Switch / Proximity Detector Interface with Line Fault Detection (LFD) Alarm

Non-Hazardous Area Terminals 7 to 14

U_m = 253V r.m.s.

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

Non-hazardous area terminals 7 to 12 are connected to relay contacts which can switch up to 253V r.m.s, 2A r.m.s. and 100VA.

Hazardous Area Terminals 1 w.r.t. 2 / 3 (Channel 1)
Hazardous Area Terminals 4 w.r.t. 5 / 6 (Channel 2)*

U_o = 10.5V C_i = 0
I_o = 14mA L_i = 0
P_o = 37mW

* For MTL5516C & MTL5517 Models only

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 (µH/ohm)
IIC	2.41	175		983
IIB**	16.8	680		1,333
IIA	75.0	1,000		1,333
I	95.0	1,000		1,333

** 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 ≥ 1% of the L_o value and
- the total C_i of the external circuit (excluding the cable) is ≥ 1% of the C_o value.

The reduced capacitance of the external circuit (including cable) shall not be greater than 1µF for Groups IIB, IIA & I and 600nF for Group IIC.