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 14.0174

Issue No: 1

Certificate history:
Issue No. 1 (2016-09-26)
Issue No. 0 (2015-02-18)

Status: **Current**

Date of Issue: **2016-09-26**

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

Equipment: **MTL4514N Switch / Proximity Detector Interface with Line Fault Detection**

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)

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

Position: Technical Manager

Signature:
(for printed version)

Date:

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

IECEx Certificate of Conformity

Certificate No: IECEx BAS 14.0174 Issue No: 1

Date of Issue: **2016-09-26** Page 2 of 4

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 600119
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/ExTR14.0351/00 GB/BAS/ExTR16.0237/00

Quality Assessment Report:

GB/BAS/QAR06.0022/06 GB/BAS/QAR07.0017/05

IECEx Certificate of Conformity

Certificate No: IECEx BAS 14.0174 Issue No: 1

Date of Issue: 2016-09-26 Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The MTL4514N Switch / Proximity Detector Interface with Line Fault Detection alarm is designed to restrict the transfer of energy from unspecified non-hazardous area equipment to an intrinsically safe circuit by limitation of voltage and current. Relays and a transformer provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The interface monitors either a detector or switch located in the hazardous area and control a non-hazardous area loads via relay. The interface is also fitted with independent phase reversal controls and Line Fault Detection (LFD) circuitry allowing an alarm condition to be signalled for either state, set by switches on the side of the interface. The interface has identification circuitry fitted on the non-hazardous area side of the circuit which allows it to be identified when fitted on specific backplanes.

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

For Input/Output Parameters see Annex

SPECIFIC CONDITIONS OF USE: NO

IECEx Certificate of Conformity

Certificate No: IECEx BAS 14.0174 Issue No: 1

Date of Issue: **2016-09-26**

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

Variation 1.1

To permit the manufacturer's name to be changed on the certificate and equipment marking. No other changes are made to the equipment design.

ExTR: **GB/BAS/ExTR16.0237/00** File Reference: **16/0371**

Annex:

IECEx BAS 14.0174 Annex.pdf

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

Input / Output Parameters

Non-Hazardous Area Terminals 7 to 14

U_m = 253V

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

Non-hazardous area terminals pins 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

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

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the hazardous area terminals 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.