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 18.0060

Issue No: 1

Certificate history:
Issue No. 1 (2018-12-10)
Issue No. 0 (2018-10-11)

Status: **Current**

Date of Issue: **2018-12-10**

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

Equipment: **MTL5553 Foundation Fieldbus Isolator / Power Supply**

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: 11-12-18

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 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 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 : 2017 Edition:7.0	Explosive atmospheres - Part 0: Equipment - 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/ExTR18.0190/00 GB/BAS/ExTR18.0303/00

Quality Assessment Report:

GB/BAS/QAR06.0022/07 GB/BAS/QAR07.0017/07

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The MTL5553 Foundation Fieldbus Isolator / Power Supply is designed to restrict the transfer of energy from unspecified non-hazardous area equipment to Fieldbus equipment located in the hazardous area by limitation of voltage and current. Two transformers and an opto-isolator provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The MTL5553 Foundation Fieldbus Isolator / Power Supply is designed for the connection to Fieldbus devices situated in the hazardous area. The equipment provides power and communication to the Fieldbus devices through the signal conductors for connection to a Fieldbus Network located in the non-hazardous area. Terminals are also provided on the hazardous area side of the equipment to permit the connection of a suitably certified Fieldbus Communicator to permit diagnostics of the Fieldbus network.

The equipment comprises two isolating transformers, an opto-isolator, duplicated zener diodes and current limiting resistors to provide voltage and current limitation. The above, together with other electronic components are mounted on a single printed circuit board (PCB) and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections. An LED is fitted to provide power on indication.

See additional sheet for electrical parameters.

SPECIFIC CONDITIONS OF USE: NO

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EQUIPMENT (continued):

I/O Parameters

Non-Hazardous Area Terminals 8, 9, 11, 12, 13 & 14

Um = 253V r.m.s.

The circuit connected to non-hazardous area terminals 8, 9, 11, 12, 13 & 14 is designed to operate from a d.c. supply voltage of up to 35V.

Hazardous Area Terminals 2 / 5 w.r.t. 1/ 4

Uo = 22V Ci = 0

Io = 216mA Li = 0

Po = 1.2W

Load Parameters

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the load connected to the hazardous area terminals 2/5 w.r.t. 1/4 must not exceed the following values: -

GROUP	CAPACITANCE (µF)	INDUCTANCE (mH)	OR	L/R RATIO (µH/ohm)
IIC	0.165	0.26		29
IIB*	1.14	0.79		119
IIA	4.2	2.12		239
I	6.0	9.54		392

* 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 Li of the external circuit (excluding the cable) is < 1% of the Lo value or
- the total Ci of the external circuit (excluding the cable) is < 1% of the Co value.

2) The above parameters are reduced to 50% when both of the two conditions below are given:

- the total Li of the external circuit (excluding the cable) is ≥ 1% of the Lo value and
- the total Ci of the external circuit (excluding the cable) is ≥ 1% of the Co 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.

The values of Lo and Co determined by this method shall not be exceeded by the sum of all of the Li plus cable inductances in the circuit and the sum of all of the Ci plus cable capacitances respectively.

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

Variation 1.1

To permit minor component and PCB changes not affecting the original assessment.

ExTR: **GB/BAS/ExTR18.0303/00**	File Reference: **18/0742**