

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 07.0071 Issue No: 4 Certificate history:
Status: Current Page 1 of 4 Issue No. 4 (2014-03-05)
Date of Issue: 2014-03-05 Issue No. 3 (2011-01-31)
Applicant: Measurement Technology Limited Issue No. 2 (2009-05-06)
Great Marlings Issue No. 1 (2008-07-18)
Butterfield Issue No. 0 (2007-12-20)
Luton
Bedfordshire LU2 8DL
United Kingdom

Electrical Apparatus: MTL5549 & MTL5549Y 2 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


Approved for issue on behalf of the IECEx
Certification Body:

R S Sinclair

Position:

General Manager

Signature:
(for printed version)


6-3-14

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](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: **Measurement Technology 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/ExTR07.0131/00](#) [GB/BAS/ExTR08.0146/00](#) [GB/BAS/ExTR10.0297/00](#)
[GB/BAS/ExTR14.0043/00](#)

Quality Assessment Report:

[GB/BAS/QAR06.0022/04](#) [GB/BAS/QAR07.0017/04](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

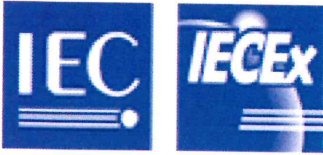
The MTL5549 & MTL5549Y 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters accepts up to two separate 4/20mA signals from controllers located in the non-hazardous to drive loads in the hazardous area. It permits bi-directional transmission of digital signals to and from an operator station or hand-held communicator. The apparatus restricts the transfer of energy from unspecified non-hazardous area apparatus to intrinsically safe circuits by limitation of voltage and current. Three transformers on each channel provide galvanic isolation between the hazardous and non-hazardous area circuitry.

Each channel of the apparatus comprise 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 MTL5549 & MTL5549Y models in terms of intrinsic safety are identical. The difference between them is the MTL5549Y has the Line Fault Detection (LFD) facility disabled.

See annex for electrical data.

CONDITIONS OF CERTIFICATION: NO



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

Variation 4.1

To permit minor drawing changes not affecting the original assessment.

Variation 4.2

To confirm the current design of the MTL5549 & MTL5549Y Two Channel Isolating Driver, 4/20mA for Smart I/P Converters have been reviewed against the requirements of IEC 60079-0: 2011 Edition 6 and IEC 60079-11: 2011 Edition 6 in respect of the differences from IEC 60079-0: 2007 Edition 5, IEC 60079-11: 2006 Edition 5 and IEC 61241-11: 2005 Edition 1 and none of the differences affect this equipment.

The standards listed on page 2 of the certificate have been updated.

Variation 4.3

Due to the correction of the permitted capacitance figures for Group I equipment in IEC 60079-11: 2011, the load parameters and associated notes for the all models of the equipment have been revised on the certificate annex (now issue 2).

Variation 4.4

To permit the equipment name on page 1 of the certificate and equipment description on page 3 to be revised to reference the MTL5549Y variant of the equipment previously included at Issue 1 of the certificate.

ExTR: GB/BAS/ExTR14.0043/00

File Reference: 13/0105

Annex:

[IECEX BAS 07.0071 Annex Issue 2.pdf](#)

MTL5549 & MTL5549Y 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters

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

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

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 w.r.t. 1 (Channel 1)

or

Hazardous Area Terminals 5 w.r.t. 4 (Channel 2)

$U_o = 28V$ $C_i = 0$
 $I_o = 93mA$ $L_i = 0$
 $P_o = 0.65W$

Each channel must be considered as a separate intrinsically safe circuit

Load Parameters

The capacitance and either the inductance or inductance to resistance ratio (L/R) of the hazardous area load connected to the apparatus must not exceed the following values for either channel:

GROUP	CAPACITANCE (μF)	INDUCTANCE (mH)	OR	L/R RATIO ($\mu H/ohm$)
IIC	0.083	4.2		56
IIB*	0.65	12.6		210
IIA	2.15	33.6		444
I	3.76	53.7		668

*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 $1\mu F$ for Groups IIB, IIA & I and 600nF for Group IIC.