



## EC - TYPE EXAMINATION CERTIFICATE

### Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

- 3 EC - Type Examination Certificate Number: **Baseefa07ATEX0215**
- 4 Equipment or Protective System: **MTL5549 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters**
- 5 Manufacturer: **Measurement Technology Limited**
- 6 Address: **Power Court, Luton, Bedfordshire LU1 3JJ**
- 7 This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- 8 Baseefa (2001) Ltd., Notified Body number 1180, in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
- The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR07.0131/00**
- 9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 60079-0: 2006 EN 60079-11: 2007 EN 61241-11: 2006**  
except in respect of those requirements listed at item 18 of the Schedule.
- 10 If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
- 11 This EC - TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.
- 12 The marking of the equipment or protective system shall include the following :

⊕ II (1) GD [Ex ia] IIC -20°C ≤ T<sub>a</sub> ≤ +60°C  
[Ex iaD]

⊕ I (M1) [Ex ia] I

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0703**

Project File No. **07/0630**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

### Baseefa

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Baseefa is a trading name of Baseefa (2001) Ltd  
Registered in England No. 4305578 at the above address

  
R/S SINCLAIR  
DIRECTOR  
On behalf of  
Baseefa (2001) Ltd.

Re-issued 20 August 2009 to replace original

13

## Schedule

14

Certificate Number Baseefa07ATEX0215

### 15 Description of Equipment or Protective System

The MTL5549 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters accepts up to two separate 4/20mA signal from controllers located in the non-hazardous area 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 an intrinsically safe circuit by limitation of voltage and current. Three transformers on each channel provides galvanic isolation between the hazardous and non-hazardous area circuitry.

Each channel of 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 single printed circuit board and housed in a moulded plastic enclosure. Polarised plugs and sockets are provided for hazardous and non-hazardous area connections.

#### Input/Output Parameters

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

$U_m = 253V$  r.m.s.

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

Hazardous Area Terminals 2 w.r.t. 1 (Channel 1)

or

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

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

Each channel must be considered as a separate intrinsically safe circuit.

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

GROUP	CAPACITANCE ( $\mu F$ )	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	3.62	53.7		668

Note: The above load parameters apply where:

1. The external circuit contains no combined lumped inductance  $L_i$  and capacitance  $C_i$  greater than 1% of the above values.
- or 2. The inductance and capacitance are distributed as in a cable.
- or 3. The external circuit contains either only lumped inductance or lumped capacitance in combination with a cable.



In all other situations e.g. the external circuit contains combined lumped inductance and capacitance, up to 50% of each of the L and C values is allowed.

\* Group IIB parameters also applicable for associated apparatus [Ex iaD]

**16 Report Number**

GB/BAS/ExTR07.0131/00

**17 Special Conditions for Safe Use**

None

**18 Essential Health and Safety Requirements**

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

**19 Drawings and Documents**

Number	Sheet	Issue	Date	Description
CI4549-1	1 of 8	1	9.06	Parts List for MTL4549
CI4549-1	2 of 8	3	09-07	Circuit Diagram for the MTL 4549
CI4549-1	3 of 8	3	09-07	Circuit Diagram for the MTL 4549
CI4549-1	4 of 8	3	11.07	MTL4549 Track Layout
CI4549-1	5 of 8	4	11.07	MTL4549 Component Layout
CI4549-1	6 of 8	2	1.07	PCB Detail for TPL300 and TPL302
CI4549-1	7 of 8	2	1.07	PCB Detail for TPL301
CI4500-100	1 of 1	1	8.06	MTL 4500 Case
CI5549-1	1 of 1	1	9.07	MTL5549 Certification Label Details and DIN Rail Fittings – Baseefa

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 07.0071



1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

- 3 Supplementary EC - Type Examination Certificate Number: **Baseefa07ATEX0215/1**
- 4 Equipment or Protective System: **MTL5549 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters**
- 5 Manufacturer: **Measurement Technology Limited**
- 6 Address: **Power Court, Luton, Bedfordshire LU1 3JJ**
- 7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa07ATEX0215 to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **0703**

Project File No. **08/0502**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**Baseefa**

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Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.

**R S SINCLAIR**

**DIRECTOR**  
On behalf of  
Baseefa



13 **Schedule**

14 **Certificate Number Baseefa07ATEX0215/1**

15 **Description of the variation to the Equipment or Protective System**

**Variation 1.1**

To permit minor component changes to the current design to form the MTL5549Y 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters.

This model of the apparatus has the same marking and parameters as previously listed for the MTL5549 model.

16 **Report Number**

GB/BAS/ExTR08.0146/00

17 **Special Conditions for Safe Use**

None

18 **Essential Health and Safety Requirements**

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 **Drawings and Documents**

Number	Sheet	Issue	Date	Description
CI4549-1	1 of 8	2	7.08	Parts List for MTL4549
CI4549-1	2 of 8	4	07-08	Circuit Diagram for the MTL4549
CI4549-1	3 of 8	4	07-08	Circuit Diagram for the MTL4549
CI4549-1	5 of 8	5	7.08	MTL4549 Component Layout
CI5549-1	1 of 1	2	7.08	MTL5549 Certification Label Details and DIN Rail Fittings – Baseefa

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 07.0071/1

Certificate Number  
See Schedule



Issued 31 January 2011  
Page 1 of 3

- 1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**
- 2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**
- 3 Supplementary EC - Type Examination Certificate See Schedule  
Number:
- 4 Equipment or protective system: See Schedule
- 5 Manufacturer: **Measurement Technology Limited**
- 6 Address: **Great Marlings, Butterfield, Luton, Bedfordshire, LU2 8DL  
(formerly Power Court, Luton, Bedfordshire, LU1 3JJ)**
- 7 This supplementary certificate extends the EC - Type Examination Certificates listed in the Schedule to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedules of the said Certificates but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

A copy of this Supplementary Certificate shall be attached to each of the original Certificates.

This certificate may only be reproduced in its entirety, without any change, Schedule included.

Baseefa Customer Reference No. **0703**

Project File No. **10/0721**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

**R S SINCLAIR**

**DIRECTOR**  
On behalf of  
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Baseefa is a trading name of Baseefa Ltd  
Registered in England No. 4305578. Registered address as above.



## Schedule

### Description of the variation to the Equipment or Protective System

#### Variation 1.

To permit the alternative fitting of 1SMB3EZ\*\* zener diodes in place of 1SMB59\*\*BT3 components currently fitted on all models of the equipment. The fitting of these components does not affect the original assessment.

#### Variation 2.

To permit an alternative method of applying the conformal coating to the PCB's fitted in all models of the equipment. This change does not affect the original assessment.

#### Variation 3.

To permit the use of an alternative DIN rail mechanism on the all models of the equipment not affecting the original assessment.

#### Variation 4.

To confirm the current design of all models have been reviewed against the requirements of EN 60079-0: 2009 in respect of the differences from EN 60079-0: 2006 and, with exception of the marking, none of the differences affect this equipment.

The marking of all models of the equipment have been revised as follows in accordance with the requirements of EN 60079-0: 2009 to include the Equipment Protection Level (EPL) markings:

$\text{Ex}$  II (1)GD [Ex ia Ga] IIC ( $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ )  
[Ex ia Da] IIC ( $-20^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ )

$\text{Ex}$  I (M1) [Ex ia Ma] I ( $-20^{\circ}\text{C} T_a \leq +60^{\circ}\text{C}$ )

Certificate No.	Supplement No.	Equipment Type
Baseefa07ATEX0210	1	MTL5510 / MTL5510B / MTL5513 Switch / Proximity Detector Interface
Baseefa07ATEX0214	2	MTL5546 Single Channel Isolating Driver, 4/20mA for Smart I/P Converters
Baseefa07ATEX0215	2	MTL5549 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters
Baseefa07ATEX0216	1	MTL5575 Temperature Converter
Baseefa09ATEX0027	2	MTL5561 Two Channel Fire / Smoke Detector Interface
Baseefa09ATEX0103	2	MTL5531 Single Channel & MTL5533 Two Channel Vibration Transducer Interface
Baseefa09ATEX0118	2	MTL5576 Two Channel & MTL5575B Single Channel Temperature Converter

#### Report No.

GB/BAS/ExTR10.0297/00

#### Special Conditions for Safe Use

None



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**Essential Health and Safety Requirements**

See original certificates

**Drawings and Documents**

<b>Number</b>	<b>Sheet</b>	<b>Issue</b>	<b>Date</b>	<b>Description</b>
CI4500-3	1 of 1	1	12.10	MTL4500 and MTL5500 – Alternative Zener Diode (Panjit)
CI4500-4	1 of 1	1	11.10	MTL4500 & 5500 – Label update to EPL - Baseefa
CI4500-5	1 of 1	1	11.10	MTL5500 – Alternative DIN Rail Mechanism
CI4500-6	1 of 1	1	20.12.10	MTL4500 and MTL5500 – Conformal Coating

The above drawings are held with IECEX Certificate No. IECEX BAS 07.0066 Iss 2.



1 **SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE**

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres  
Directive 94/9/EC**

- 3 Supplementary EC - Type Examination Certificate Number: **Baseefa07ATEX0215/3**
- 4 Equipment or Protective System: **MTL5549 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters**
- 5 Manufacturer: **Measurement Technology Limited**
- 6 Address: **Great Marlings, Butterfield, Luton, Bedfordshire, LU2 8DL**

7 This supplementary certificate extends EC – Type Examination Certificate No. Baseefa07ATEX0215 to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

8 Item 9 of the original Certificate is replaced by “Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 60079-0: 2012 EN 60079-11: 2012**

except in respect of those requirements listed at item 18 of the Schedule.”

9 The marking of the equipment has changed from the original Certificate and shall include the following:

⊕ II (1) GD [Ex ia Ga] IIC (-20°C ≤ T<sub>a</sub> ≤ +60°C)  
[Ex ia Da] IIIC (-20°C ≤ T<sub>a</sub> ≤ +60°C)

⊕ I (M1) [Ex ia Ma] I (-20°C ≤ T<sub>a</sub> ≤ +60°C)

This certificate shall be held with the original certificate.

Baseefa Customer Reference No. **0703**

Project File No. **13/0105**

This document is issued by the Company subject to its General Conditions for Certification Services accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and the Supplementary Terms and Conditions accessible at <http://www.baseefa.com/terms-and-conditions.asp>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. It does not necessarily indicate that the equipment may be used in particular industries or circumstances. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, schedule included, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

**SGS Baseefa Limited**

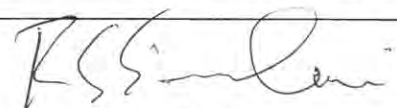
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**R S SINCLAIR**  
GENERAL MANAGER

On behalf of SGS Baseefa Limited

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## Schedule

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Certificate Number Baseefa07ATEX0215/3

### 15 Description of the variation to the Equipment or Protective System

#### Variation 3.1

To permit minor drawing changes not affecting the original assessment.

As part of this, drawing No. CI5500-100 replaces drawing No. CI4500-100.

#### Variation 3.2

To confirm the current design of the MTL5549 & MTL5549Y 2 Channel Isolating Driver, 4/20mA for Smart I/P Converters have been reviewed against the requirements of EN 60079-0: 2012 and EN 60079-11: 2012 in respect of the differences from EN 60079-0: 2009, EN 60079-11: 2007 & EN 61241-11: 2006 and none of the differences affect the equipment.

Due to the correction of the permitted capacitance figures for Group I equipment in EN 60079-11: 2012, the load parameters for the MTL5549 & MTL5549Y models are revised to the following: -

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

GROUP	CAPACITANCE ( $\mu$ F)	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  $600$ nF for Group IIC.

### 16 Report Number

GB/BAS/ExTR14.0043/00

### 17 Specific Conditions of Use

None

### 18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

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**19 Drawings and Documents**

<b>Number</b>	<b>Sheet</b>	<b>Issue</b>	<b>Date</b>	<b>Description</b>
CI4549-1	5 of 8	6	1.13	MTL4549 Component Layout
CI5500-100	1 of 1	3	1.13	New 5500 Outline

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 07.0071 Iss. 4