



1 **EC - TYPE EXAMINATION CERTIFICATE**

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

3 EC - Type Examination Certificate Number: **Baseefa07ATEX0214**

4 Equipment or Protective System: **MTL5546 Single 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/ExTR07.0130/00**


9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0: 2006 EN 60079-11: 2007 EN 61241-0: 2006 EN 61241-11: 2005

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_a ≤ +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. **07/0629**

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.

R S SINCLAIR

DIRECTOR

On behalf of

Baseefa (2001) Ltd.

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Baseefa is a trading name of Baseefa (2001) Ltd

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Schedule

14

Certificate Number Baseefa07ATEX0214

15 Description of Equipment or Protective System

The MTL5546 Single Channel Isolating Driver, 4/20mA for Smart I/P Converters accepts a 4/20mA signal from a controller located in the non-hazardous area to drive a load 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 provide galvanic isolation between the hazardous and non-hazardous area circuitry.

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 11 to 14

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

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

Hazardous Area Terminals 2 w.r.t. 1

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

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

GROUP	CAPACITANCE (μF)	INDUCTANCE (mH)	OR	L/R RATIO ($\mu H/\text{ohm}$)
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

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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
CI4546-1	1 of 7	2	12.06	Parts List for MTL4546
CI4546-1	2 of 7	4	9.07	Circuit Diagram for the MTL 4546
CI4546-1	3 of 7	3	6.07	MTL4546 Track Layout
CI4546-1	4 of 7	4	9.07	MTL4546 Component Layout
CI4546-1	5 of 7	2	1.07	PCB Detail for TPL300 and TPL302
CI4546-1	6 of 7	2	1.07	PCB Detail for TPL301
CI4500-100	1 of 1	1	8.06	MTL 4500 Case
CI5546-1	1 of 1	1	9.07	MTL5546 Certification Label Details and DIN Rail Fittings – Baseefa

The above drawings are associated and held with IECEx Certificate No. IECEx BAS 07.0070