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 : **BAS99ATEX7085**

4 Equipment or Protective System: **MTL5082 RESISTANCE ISOLATOR**

5 Manufacturer: **MEASUREMENT TECHNOLOGY LIMITED**

6 Address: **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 The Electrical Equipment Certification Service, notified body number 600 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 N°

99(C)0081 dated 15 April 1999

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 **EN 50020: 1994**

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. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment or protective system.

12 The marking of the equipment or protective system shall include the following:-

Ex **II [1] G** **[EEx ia] IIC ($-20°C \leq T_a \leq +60°C$)**

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

File No: EECS 0703/02/276

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the apparatus may be used in particular industries or circumstances.

I M CLEARE
DIRECTOR
29 April 1999

HSE Health & Safety Executive

Electrical Equipment Certification Service
Health and Safety Executive
Harpur Hill, Buxton, Derbyshire. SK17 9JN. United Kingdom
Tel: 01298 28000 Fax: 01298 28244

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS99ATEX7085**

15 **Description of Equipment or Protective System**

The MTL5082 Resistance Isolator is designed to restrict the transfer of energy from unspecified safe area apparatus to a resistor by the limitation of voltage and current. A transformer and an opto-isolator provide galvanic isolation between the hazardous and non hazardous area circuitry.

The apparatus comprises of an isolating transformer, an opto-isolator and a detection circuit protected by zener diodes/resistance combinations to provide voltage and current limitation. A jack-socket is provided on the hazardous area side of the circuit for the connection of a suitably certified data terminal for programming the apparatus. All of 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 the hazardous area and non-hazardous area connections.

Connectors CON3, CON4 and CON5

U_m = 250V r.m.s.

The circuit connected to the safe area terminals CON3, CON4 and CON5 is designed to operate from a d.c. supply voltage of up to 35V.

Connectors CON1 and CON2 - all pins

U_o = 6.6V
I_o = 27mA
P_o = 0.05W

Connector CON1 pin 3 wrt pin 1

U_o = 1.1V
I_o = 4mA
P_o = 1mW

Although the MTL5082 Reistance Isolator does not itself comply with the requirements of Clause 5.4 of EN 50020: 1994, when CON1 pin 3 with respect to 1 is connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface unit will not add more than the values specified in Clause 5.4 of EN 50020: 1994 to the parameters of the circuit into which it is connected.

Connector CON6 (Jack-socket)

U_o = 7.2V
I_o = 15mA
P_o = 26mW

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

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS99ATEX7085**

GROUP	CAPACITANCE in µF	INDUCTANCE in mH	OR L/R RATIO in µH/ohm
CONNECTORS CON1 AND CON2 - All pins			
IIC	22.0	48.7	322
IIB	500.0	178.4	1250
IIA	1000.0	363.7	1705
CONNECTOR CON6 OR CON1 pins 3 wrt 1			
IIC	13.5	153.5	998
IIB	240.0	591.4	1563
IIA	1000.0	1000.0	1563

16 **Report No**

99(C)0081

17 **SPECIAL CONDITIONS FOR SAFE USE**

None

18 **Essential Health and Safety Requirements**

ESSENTIAL HEALTH & SAFETY REQUIREMENTS not covered by standards listed in Section 9		
Clause	**Subject**	**Compliance**
1.0.1	Principles of integrated explosion protection	Report No 99(C)0081 Clause 6.1.0.1
1.0.2	Analysis of possible operating faults	Report No 99(C)0081 Clause 6.1.0.2
1.0.4	Surrounding area conditions	Report No 99(C)0081 Clause 6.1.0.4
1.0.5	Marking	Report No 99(C)0081 Clause 6.1.0.5
1.0.6	Instructions	Report No 99(C)0081 Clause 6.1.0.6
1.1.3	Changes in characteristics of materials and combinations thereof	Report No 99(C)0081 Clause 6.1.1.3
1.2.1	Design with regard to technological knowledge	Report No 99(C)0081 Clause 6.1.2.1
1.2.2	Components for incorporation or replacement	Report No 99(C)0081 Clause 6.1.2.2
1.2.4	Dust deposits	Report No 99(C)0081 Clause 6.1.2.4
1.2.5	Additional means of protection	Report No 99(C)0081 Clause 6.1.2.5
1.2.7	Protection against other hazards	Report No 99(C)0081 Clause 6.1.2.7
1.3.1	Hazards arising from different ignition sources	Report No 99(C)0081 Clause 6.1.3.1
1.4.2	Withstanding attack by aggressive substances	Report No 99(C)0081 Clause 6.1.4.2
1.5.1	General Requirements for Safety Devices	Report No 99(C)0081 Clause 6.1.5.1
1.5.2	Safety device failure	Report No 99(C)0081 Clause 6.1.5.2
1.6.4	Hazards arising from connections	Report No 99(C)0081 Clause 6.1.6.4
2.1.1	Category 1G	Report No 99(C)0081 Clause 6.2.1.1

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS99ATEX7085**

19 **DRAWINGS**

Number	Sheet	Issue	Date	Description
CI 5082	1	3	4.99	MTL5082 Parts List
CI 5082	2	2	2.99	MTL5082 Circuit Diagram
CI 5082	3	1	2.99	MTL5082 Component Layout
CI 5082	4	1	2.99	MTL5082 General Assembly
CI 5082	5	1	2.99	MTL5082 PCB Track Layout
CI 5082	6	1	2.99	MTL5082 Transformer Winding Details
*CI 5000-1	1	2	11.95	TFR301 I.S. Transformer
*CI 5000-1	2	2	2.96	TFR301 I.S. Transformer

Drawing marked * are held on BASEEFA Certificate No Ex 95C2289/1

BASEEFA List Keywords
2ISOLBAR

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: **BAS99ATEX7085/1**

4 Equipment or Protective System: **MTL5082 RESISTANCE ISOLATOR**

5 Manufacturer: **MEASUREMENT TECHNOLOGY LIMITED**

6 Address: **Luton, Bedfordshire, LU1 3JJ**

7 This supplementary certificate extends EC-Type Examination Certificate No. BAS99ATEX7085 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 and without any change, schedule included.

File No: EECS 0703/02/276

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the apparatus may be used in particular industries or circumstances.

HSE Health & Safety Executive

Electrical Equipment Certification Service
Health and Safety Executive
Harpur Hill, Buxton, Derbyshire, SK17 9JN, United Kingdom
Tel: +44(0)1298 28000 Fax: +44(0)1298 28244
internet: www.baseefa.com e-mail: baseefa.info.eecs@hsl.gov.uk

I M CLEARE
DIRECTOR
29 April 2002

13 Schedule

14 SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE N° BAS99ATEX7085/1

Description of the Variation to the Equipment or Protective System

VARIATION 1.1

To permit the connection of MTL5000 Ring Terminal assemblies in place of the safe and hazardous area screw terminals. The enclosure remains IP20 whether or not the Ring Terminal is fitted. The following MTL5000 Ring Terminals may be connected to the MTL5082. Blanking covers may be removed if necessary.

Hazardous Area Terminal	MTL5082 pins	1, 3, 4, 5
	HAZ-RT-3-5	1, 2, 3, 4
Safe Area Terminal	MTL5082 pins	9, 10, 11, 12
	SAF-RT-9-12	5, 6, 7, 8

Report No.

Not applicable.

Special Conditions For Safe Use

Not applicable.

Essential Health and Safety Requirements

See original certificate.

DRAWINGS

Number	Sheet	Issue	Date	Description
*CI5000-12	1 to 4	1	02.02	MTL5000 Ring Terminal

Drawing marked * is associated with and held on BASEEFA Certificate BAS01ATEX7144