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 : **BAS99ATEX7069**

4 Equipment or Protective System: **MTL 5081 MILLIVOLT ISOLATOR**

5 Manufacturer: **MEASUREMENT TECHNOLOGY LIMITED**

6 Address: **Power Court, Luton, 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)0001 dated 22 March 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:-

 **II [1] G** **[EEx ia] IIC (-20°C ≤ T_{amb} ≤ 60°C)**

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

File No: EECS 0703/02/274

I M CLEARE
DIRECTOR
31 March 1999

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: 01298 28000 Fax: 01298 28244

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS99ATEX7069**

15 **Description of Equipment or Protective System**

The MTL5081 Millivolt Isolator restricts the transfer of energy from unspecified safe area apparatus to intrinsically safe circuits by the limitation of voltage and current.

The MTL5081 Millivolt Isolator is comprised of two isolating transformers which provide galvanic isolation between the hazardous area and the nonhazardous area circuitry and a combination of diodes and resistance on the output channel 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 the hazardous area and nonhazardous area connections.

The apparatus is designed to operate from a d.c. supply of up to 35V on CON 5 pins 13 and 14 and 0.5V d.c. on CON 4 pins 11 and 12. The segregation of the nonhazardous area and the hazardous area circuits meets the requirements for 375V peak.

Input/Output Parameters

Connector CON4, CON5

U_m = 250V d.c. or r.m.s.

Connector CON 1

U_o = 1.0V

I_o = 48mA

P_o = 12mW

Although the MTL 5081 does not itself comply with the requirements of Clause 5.4 of EN 50020: 1994, when CON1 is connected in an intrinsically safe circuit the internal stored energy, voltage and current of the interface unit will not add more then the values specified in Clause 5.4 of EN 50020: 1994 to the parameters of the circuit into which it is connected.

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**

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GROUP	CAPACITANCE in µF	INDUCTANCE in mH	OR	L/R RATIO in µH/ohm
IIC	100	15		2,972
IIB	1,000	60		11,889
IIA	1,000	120		23,779

16. **Report No.**

99(C)0001 dated 22 March 1999

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**
1.0.2	Analysis of possible operating faults	Report No 99(C)0001 Clause 5.1.0.2
1.0.4	Surrounding area conditions	Report No 99(C)0001 Clause 5.1.0.4
1.0.5	Marking	Report No 99(C)0001 Clause 5.1.0.5
1.0.6	Instructions	Report No 99(C)0001 Clause 5.1.0.6
1.1.3	Changes in characteristics of materials and combinations thereof	Report No 99(C)0001 Clause 5.1.1.3
1.2.2	Components for incorporation or replacement	Report No 99(C)0001 Clause 5.1.2.2
1.2.4	Dust deposits	Report No 99(C)0001 Clause 5.1.2.4
1.2.5	Additional means of protection	Report No 99(C)0001 Clause 5.1.2.5
1.2.7	Protection against other hazards	Report No 99(C)0001 Clause 5.1.2.7
1.4.2	Withstanding attack by aggressive substances	Report No 99(C)0001 Clause 5.1.4.2
1.6.4	Hazards arising from connections	Report No 99(C)0001 Clause 5.1.6.4
2.1.1	Category 1G	Report No 99(C)0001 Clause 5.2.1.1

19. **DRAWINGS**

Number	Sheet	Issue	Date	Description
CI 5081	1	3	3.99	Parts List
CI 5081	2	1	2.99	Circuit Diagram
CI 5081	3	2	3.99	PCB Component Layout
CI 5081	4	2	3.99	General Assembly and Label Details
CI 5081	5	2	3.99	PCB Track Layout

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Number	Sheet	Issue	Date	Description
CI 5081	6	1	02.99	Transformer Winding Details
*CI5000-1	1	2	11.95	TFR301 Assembly Details
*CI5000-1	2	2	2.96	TFR301 Assembly Details
CI5000-7	1	2	3.99	TFR307 Assembly Details
CI5000-7	2	1	7.97	TFR307 PCB

Drawings marked * are held on BASEEFA Certificate 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: **BAS99ATEX7069/1**

4 Equipment or Protective System: **MTL5081 MILLIVOLT ISOLATOR**

5 Manufacturer: **MEASUREMENT TECHNOLOGY LIMITED**

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

7 This supplementary certificate extends EC-Type Examination Certificate No. BAS99ATEX7069 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.

File No: EECS 0703/02/274

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
5 July 1999

HSE Health & Safety Executive

Electrical Equipment Certification Service
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13 **Schedule**

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Description of the Variation to the Equipment or Protective System

VARIATION ONE

To permit minor changes to the printed circuit board and certification label.

Report Nos.

None.

SPECIAL CONDITIONS FOR SAFE USE

None.

Essential Health and Safety Requirements

See original certificate.

DRAWINGS

Number	Sheet	Issue	Date	Description
CI5081	2	2	5.99	MTL5081 Circuit Diagram
CI5081	3	3	5.99	MTL5081 Component Layout
CI5081	4	3	5.99	MTL5081 GA and Label
CI5081	5	3	5.99	MTL5081 PCB track layout