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 : **BAS01ATEX7181**

4 Equipment or Protective System: **MTL4220 EARTH LEAKAGE DETECTOR**

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°

01(C)0221 dated 17 May 2001 (held on EECS 0703/02/300)

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

EN 50014: 1997 + Amds 1 & 2 **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:-

Ⓔx II (1) GD [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 0703/02/319

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
13 December 2001

HSE Health & Safety Executive

Electrical Equipment Certification Service
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13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS01ATEX7181**

15 **Description of Equipment or Protective System**

An **MTL 4220 Earth Leakage Detector** is designed to continuously monitor up to eight floating electrical circuits in the hazardous area and warn if their resistance to earth falls below a pre-set level. The apparatus restricts the transfer of energy from the unspecified non-hazardous area apparatus to the intrinsically safe circuits in the hazardous area and provides galvanic isolation between them.

The apparatus comprises a number of electrical components, including an isolating transformer, an opto-isolator, a relay, fuses, resistors and zener diodes all mounted onto a single printed circuit board and housed within a plastic enclosure.

Polarised connectors provide the connection facilities to the hazardous area and the non-hazardous area circuits.

CON2 pins 7, 8, 9, 10, 11, 13 and 14

$U_m = 250V$

The circuit connected to the safe area terminals CON2 is designed to operate from a d.c. supply voltage of up to 35V.

CON A1, CON B1, CON C1 pins H1 to H8 + E

Single Channel	**All eight channels combined**
$U_o = 9.0V$	$U_o = 9.0V$
$I_o = 0.134mA$	$I_o = 1.07mA$
$P_o = 0.30mW$	$P_o = 2.4mW$
$C_i = 0$	$C_i = 0$
$L_i = 0$	$L_i = 0$

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

GROUP	CAPACITANCE in µF	INDUCTANCE in mH	OR L/R RATIO in µH/ohm
IIC	4.9	1000	30
IIB	40	1000	89
IIA	500	1000	238

Equipment referred to in this certificate having the same type number as items in BASEEFA Certificate No Ex 95C2288 may be used as a direct substitute in a system provided that the cable parameters used are within the limits shown on this certificate..

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS01ATEX7181**

16 **Report No.**

01(C)0221

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**
1.1.3	Changes in characteristics of materials and combinations thereof	Report No 01(C)0221 Clause 5.1.1.3
1.2.2	Components for incorporation or replacement	Report No 01(C)0221 Clause 5.1.2.2
1.2.5	Additional means of protection	Report No 01(C)0221 Clause 5.1.2.5
1.2.7	Protection against other hazards	Report No 01(C)0221 Clause 5.1.2.7
1.4.2	Withstanding attack by aggressive substances	Report No 01(C)0221 Clause 5.1.4.2

19 **DRAWINGS**

Number	Sheet	Issue	Date	Description
CI4220-1	2	3	10.01	MTL4220 Parts List
CI4220-1	3	1	03.95	MTL4220 Circuit Diagram
CI4220-1	4	1	03.95	MTL4220 Component Layout
CI4220-1	5	1	03.95	MTL4220 General Assembly
CI4220-1	6	1	03.95	MTL4220 Internal Construction
CI4220-1	7	1	03.95	MTL4220 PCB Track Layout
CI4220-1	8	1	03.95	MTL4220 Transformer Winding Details
CI4220-1	9	1	10.01	MTL4220 Certification Label
*CI4000-1	1	2	11.92	MTL4000 Series 2-core IS Transformer
*CI4000-1	2	2	11.92	MTL4000 Series 2-core IS Transformer

Drawings marked * are associated with and are held on BASEEFA Certificate BAS01ATEX7163

BASEEFA List Keywords
2ISOLBAR