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 : **BAS01ATEX7144**

4 Equipment or Protective System: **MTL5014 SINGLE CHANNEL SWITCH/PROXIMITY DETECTOR INTERFACE**

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)0220 dated 18 December 2001

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:-

⟨Ex⟩ II (1) GD [EEx ia] IIC ($-20°C \leqslant T_a \leqslant +60°C$)

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

File No: EECS 0703/02/299

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
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I M CLEARE
DIRECTOR
29 April 2002

Re-issued 5 July 2002 to correct drawing numbers.

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS01ATEX7144**

15 **Description of Equipment or Protective System**

An MTL5014 Single Channel Switch/Proximity Detector Interface is designed to restrict the transfer of energy from an unspecified safe-area apparatus to an intrinsically safe circuit by the limitation of voltage and current.

Isolation between non-hazardous and hazardous area circuits is achieved using a galvanically isolating transformer and opto-coupling devices and these components, along with other electronic components, are mounted on a printed circuit board (pcb) which is housed in a plastic enclosure. Colour coded terminals are provided for making external connections.

The segregation of the non-hazardous and hazardous area circuits meet the requirements for 375V peak.

CON 3, Pins 7, 8, 9; CON 4, Pins 10, 11, 12 and CON 5, Pins 13 &14

U_m = 250V

The circuit connected to the safe area terminals CON 5 are designed to operate from a d.c. supply voltage of up to 35V and terminals CON 3 and CON 4 are connected to relay change over contacts which can switch up to 250V r.m.s, 125V d.c. and 100VA.

CON 1, Pins 3/2 wrt 1

U_o = 10.5V
I_o = 14mA
P_o = 37mW
C_i = 0
L_i = 0

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

GROUP	CAPACITANCE in µF	INDUCTANCE in mH	OR	L/R RATIO in µH/ohm
IIC	2.41	175		983
IIB	16.8	680		1333
IIA	75	1000		1333

Equipment referred to in this certificate having the same type number as items in BASEEFA Certificate No Ex 97D2285 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° BAS01ATEX7144**

VARIATION 0.1

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 MTL5014. Blanking covers may be removed if necessary.

Hazardous Area Terminal	MTL5014 pins	1, 2, 3
	HAZ-RT-1-3	1, 2, 3
Safe Area Terminal	MTL5014 pins	10, 11, 12
	SAF-RT-10-12	6, 7, 8

16 **Report No.**

01(C)0220

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)0220 Clause 5.1.1.3
1.2.2	Components for incorporation or replacement	Report No 01(C)0220 Clause 5.1.2.2
1.2.5	Additional means of protection	Report No 01(C)0220 Clause 5.1.2.5
1.2.7	Protection against other hazards	Report No 01(C)0220 Clause 5.1.2.7
1.4.2	Withstanding attack by aggressive substances	Report No 01(C)0220 Clause 5.1.4.2

19 **DRAWINGS**

Number	Sheet	Issue	Date	Description
CI5014	1	2	11.01	MTL5014 Parts List
CI5014	2	1	06.97	MTL5014 Circuit Diagram
CI5014	3	1	06.97	MTL5014 Component Layout
CI5014	4	2	11.01	MTL5014 General Assembly
CI5014	5	1	06.97	MTL5014 PCB Track Layout
CI5014	6	2	11.01	MTL5014 Transformer Winding Details

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS01ATEX7144**

Number	Sheet	Issue	Date	Description
*CI5000-6	1	5	07.00	IS Transformer TFR309
*CI5000-6	2	5	07.00	IS Transformer TFR309

Drawings marked * are associated with and are held on BASEEFA Certificate BAS01ATEX7147

Number	Sheet	Issue	Date	Description
Drawing associated with Variation 0.1				
**CI5000-12	1 to 4	1	02.02	MTL5000 Ring Terminal

Drawing marked ** is held on this file and is associated with a number of MTL5000 Series EC-Type Examination Certificates.

BASEEFA List Keywords
2ISOLBAR