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 : **BAS01ATEX7177**

4 Equipment or Protective System: **MTL4073 TEMPERATURE CONVERTER**

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:-

⟨Ex⟩ 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 0703/02/315

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
13 December 2001

13 Schedule

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15 Description of Equipment or Protective System

An MTL4073 Temperature Converter is designed to restrict the transfer of energy from unspecified safe area apparatus to either thermocouples or RTDs by the limitation of voltage and current. Transformers and opto-isolators provide galvanic isolation between the hazardous and non hazardous circuitry.

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

CON3, pins 7 to 14

U_m = 250V

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

CON1, pins 1 to 6

U_o = 21V (for capacitive purposes only)
= 6.6V (long term)
I_o = 76mA
P_o = 0.13W

C_i = 0
L_i = 0

CON2

U_o = 7.2V
I_o = 14.6mA
P_o = 26mW

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:

13 **Schedule**

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GROUP	CAPACITANCE in µF	INDUCTANCE in mH	OR	L/R RATIO in µH/ohm
CON1, pins 1 to 6				
IIC	0.188	6.42		288
IIB	1.270	25.67		1057
IIA	4.780	53.02		2228
CON2				
IIC	13.5	153		1295
IIB	240.0	591		2028
IIA	1000.0	1000		2028

Equipment referred to in this certificate having the same type number as items in BASEEFA Certificate No Ex 93C2173 may be used as a direct substitute in a system provided that the cable parameters used are within the limits shown on this certificate

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
CI4073-1	2	7	07.01	MTL4073 Parts List
CI4073-1	3	7	10.97	MTL4073 Circuit Diagram
CI4073-1	4	7	10.97	MTL4073 Component Layout

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Number	Sheet	Issue	Date	Description
CI4073-1	5	2	09.95	MTL4073 General Assembly
CI4073-1	6	1	04.93	MTL4073 Internal Construction
CI4073-1	7	6	10.97	MTL4073 PCB Track Layout
CI4073-1	8	1	04.93	MTL4073 Transformer Winding Details
CI4073-1	9	1	07.01	MTL4073 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 held on BASEEFA Certificate BAS01ATEX7163

BASEEFA List Keywords
2ISOLBAR