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 : **BAS01ATEX7166**

4 Equipment or Protective System: **MTL4023 SOLENOID/ALARM DRIVER WITH LINE FAULT DETECTION**

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 ≤ T_a ≤ +60°C)

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

File No: EECS 0703/02/304

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**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS01ATEX7166**

15 **Description of Equipment or Protective System**

An MTL4023 Solenoid/Alarm Driver with Line Fault Detection is designed to monitor apparatus such as apparatus meeting the requirements of clause 5.4 of EN 50020: 1994 and to restrict the transfer of energy from unspecified safe-area apparatus to an intrinsically safe circuit by the limitation of voltage and current. A transformer and opto-isolators provide galvanic isolation between the hazardous and non-hazardous area circuitry.

Three LEDs are provided to indicate power-on, output active and line fault.

The apparatus comprises of an isolating transformer, three opto-isolators and a fuse, zener diode / resistance combination 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 and non-hazardous connections.

CON2, pins 7 to 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.

CON1, pin 1 wrt 4/6

U_o = 25.0V	OR	-15.22V
I_o = 150mA		-90mA
P_o = 0.94W		

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	0.11	1.45		40
IIB	0.84	7.22		158
IIA	2.97	14.42		326

Equipment referred to in this certificate having the same type number as items in BASEEFA Certificate No Ex 93C2499 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° BAS01ATEX7166**

VARIATION 0.1

To permit minor changes to the MTL4023, thus forming the MTL4023R Solenoid/Alarm Driver with Line Fault Detection. Both versions have identical output parameters.

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
CI4023-1	2	2	10.01	MTL4023 Parts List
CI4023-1	3	1	10.93	MTL4023 Circuit Diagram
CI4023-1	4	1	10.93	MTL4023 Component Layout
CI4023-1	5	1	10.93	MTL4023 General Assembly
CI4023-1	6	1	10.93	MTL4023 Internal Construction
CI4023-1	7	1	10.93	MTL4023 PCB Track Layout
CI4023-1	8	1	10.93	MTL4023 Transformer Winding Details
CI4023-1	9	1	10.01	MTL4023 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

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS01ATEX7166**

DRAWINGS ASSOCIATED WITH VARIATION 0.1

Number	Sheet	Issue	Date	Description
CI4023-2	2	2	08.01	MTL4023R Parts List
CI4023-2	3	1	04.96	MTL4023R Circuit Diagram
CI4023-2	4	1	04.96	MTL4023R Component Layout
CI4023-2	5	1	04.96	MTL4023R General Assembly
CI4023-2	6	1	04.96	MTL4023R Internal Construction
CI4023-2	7	1	04.96	MTL4023R PCB Track Layout
CI4023-2	8	1	04.96	MTL4023R Transformer Winding Details
CI4023-2	9	1	10.01	MTL4023R Certification Label

BASEEFA List Keywords
2ISOLBAR