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 : **BAS01ATEX7147**

4 Equipment or Protective System: **MTL5018 TWO 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 (held on EECS 0703/02/299)

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 0703/02/322

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: +44(0)1298 28000 Fax: +44(0)1298 28244
internet: www.baseefa.com e-mail: baseefa.info.eecs@hsl.gov.uk

I M CLEARE
DIRECTOR
29 April 2002

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS01ATEX7147**

15 **Description of Equipment or Protective System**

An MTL 5018 Two Channel Switch/Proximity Detector Interface with line fault detection and phase reversal is designed to restrict the transfer of energy from unspecified safe-area apparatus to two independent intrinsically safe circuits by the limitation of voltage and current. A transformer and two opto-isolators provide galvanic isolation between the hazardous area and the non-hazardous area circuitry.

LED indication is provided to indicate power-on and the state of each output.

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 on CON 3, CON 4 and CON 5 are designed to operate from a d.c. supply voltage of up to 35V. The two relays, with working values of 2000VA; 125V d.c. and 375V a.c. (peak), are used to switch the output loads in the safe area.

Channel 1, CON 1, Pins 2/3 wrt 1
Or
Channel 2, CON 2, Pins 5/6 wrt 4
Pins 2,3 and 5,6 are interconnected for each separate channel

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

Each channel may be considered as a separate intrinsically safe circuit.

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 96D2410 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° BAS01ATEX7147**

VARIATION 0.1

To permit the components associated with the second channel of the MTL 5018 to be removed thus forming the MTL 5011B Single Channel Switch/ Proximity Detector with Line Fault Detection and Phase Reversal.

CON 4, Pins 10, 11, 12 and CON 5, Pins 13 &14

$U_m = 250V$

The circuit connected to the safe area terminals CON 4 and CON 5 are designed to operate from a d.c. supply voltage of up to 35V. The two relays, with working values of 2000VA; 125V d.c. and 375V a.c. (peak), are used to switch the output loads in the safe area.

Channel 1, CON 1, Pins 2/3 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 values for a single channel of an MTL 5018 above.

VARIATION 0.2

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 MTL5018 and MTL5011B. Blanking covers may be removed if necessary.

Hazardous Area Terminal	MTL5018 pins	1, 2, 4, 5
	HAZ-RT-1-5	1, 2, 3, 4
Safe Area Terminal	MTL5018 pins	10, 11, 12
	SAF-RT-10-12	6, 7, 8

Hazardous Area Terminal	MTL5011B pins	1, 2, 3
	HAZ-RT-1-3	1, 2, 3
Safe Area Terminal	MTL5011B pins	10, 11, 12
	SAF-RT-10-12	6, 7, 8

16 **Report No**

01(C)0220

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS01ATEX7147**

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
CI5018-1	2	1	09.96	MTL5018 Parts List
CI5018-1	3	2	11.00	MTL5018 Circuit Diagram
CI5018-1	4	2	06.97	MTL5018 Component Layout
CI5018-1	5	1	09.96	MTL5018 General Assembly
CI5018-1	6	2	11.01	MTL5018 Internal Construction
CI5018-1	7	2	06.97	MTL5018 PCB Track Layout
CI5018-1	8	1	09.96	MTL5018 Transformer Winding Details
*CI5000-6	1	5	07.00	IS Transformer TFR309
*CI5000-6	2	5	07.00	IS Transformer TFR309

Drawings marked * are associated with BASEEFA Certificate BAS01ATEX7144

Drawings associated with Variation 0.1

Number	Sheet	Issue	Date	Description
CI5011-2	2	1	09.96	MTL5011B Parts List
CI5011-2	3	2	11.00	MTL5011B Circuit Diagram
CI5011-2	4	3	09.97	MTL5011B Component Layout
CI5011-2	5	2	09.97	MTL5011B General Assembly
CI5011-2	6	2	11.01	MTL5011B Internal Construction
CI5011-2	7	2	06.97	MTL5011B PCB Track Layout
CI5011-2	8	1	09.96	MTL5011B Transformer Winding Details

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS01ATEX7147**

Drawings associated with Variation 0.2

Number	Sheet	Issue	Date	Description
**CI5000-12	1 to 4	1	02.02	MTL5000 Ring Terminal

Drawing marked ** is associated with and held on BASEEFA Certificate BAS01ATEX7144

BASEEFA List Keywords
2ISOLBAR