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 : **BAS01ATEX7156**

4 Equipment or Protective System: **MTL5046 ISOLATING DRIVER, 4/20mA, WITH SMART COMMUNICATIONS AND 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)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:-

⟨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 0703/02/331

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

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I M CLEARE
DIRECTOR
29 April 2002

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS01ATEX7156**

15 **Description of Equipment or Protective System**

An MTL5046 Isolating Driver, 4/20mA, with Smart Communications and Line Fault Detection accepts a 4/20mA signal from a controller located in the safe area to drive a load in the hazardous area. It permits bi-directional transmission of digital signals to and from an operator station or hand-held communicator. The isolator restricts the transfer of energy from unspecified safe-area apparatus to an intrinsically safe circuit by the limitation of voltage and current. Three transformers provide galvanic isolation between the hazardous and non-hazardous area circuitry.

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.

CON1/2, Pin 2/5 w.r.t. Pins 1/4

$U_o = 28V$
$I_o = 93mA$
$P_o = 0.65W$

$C_i = 0$
$L_i = 0$

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 (μF)	INDUCTANCE (mH)	OR L/R RATIO (μH/ohm)
IIC	0.083	3.05 (4.2)	55
IIB	0.650	9.15 (12.6)	210
IIA	2.150	24.4 (33.6)	444

When the external circuit contains no lumped inductance greater than 10μH i.e. the L_i of any attached apparatus is less than 10μH, the cable inductance may be increased to the values within parentheses.

Equipment referred to in this certificate having the same type number as items in BASEEFA Certificate No Ex 96D2483 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° BAS01ATEX7156**

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 MTL5046. Blanking covers may be removed if necessary.

Hazardous Area Terminal	MTL5046 pins	1, 2, 4, 5
	HAZ-RT-1-5	1, 2, 3, 4
Safe Area Terminal	MTL5046 pins	8, 9, 11, 12
	SAF-RT-8-12	5, 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
CI5046-1	2	2	11.01	MTL5046 Parts List
CI5046-1	3	2	11.01	MTL5046 Circuit Diagram
CI5046-1	4	3	11.01	MTL5046 Component Layout
CI5046-1	5	1	09.96	MTL5046 General Assembly
CI5046-1	6	2	11.01	MTL5046 Internal Construction
CI5046-1	7	3	11.98	MTL5046 PCB Track Layout
CI5046-1	8	2	11.01	MTL5046 Transformer Winding Details
*CI 5000-1	1	1	5.95	I.S. Transformer TRF301

13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS01ATEX7156**

Number	Sheet	Issue	Date	Description
*CI 5000-1	2	1	5.95	I.S. Transformer TFR301
*CI 5000-2	1	1	5.95	I.S. Transformer TFR300
*CI 5000-2	2	1	5.95	I.S. Transformer TFR300
**CI 5000-3	1	1	9.95	I.S. Transformer TFR302
**CI 5000-3	2	1	9.95	I.S. Transformer TFR302

Drawings marked * are associated with and are held on BASEEFA Certificate BAS01ATEX7157
Drawings marked ** are associated with and are held on BASEEFA Certificate BAS01ATEX7153

Drawing associated with Variation 0.1

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

1 # SUPPLEMENTARY EC - TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**

3	Supplementary EC - Type Examination Certificate Number:	**BAS01ATEX7156/1**
4	Equipment or Protective System:	**MTL5046 ISOLATING DRIVER, 4/20mA, WITH SMART COMMUNICATIONS AND LINE FAULT DETECTION**
5	Manufacturer:	**MEASUREMENT TECHNOLOGY LIMITED**
6	Address:	**Luton, Bedfordshire, LU1 3JJ**

7 This supplementary certificate extends EC – Type Examination Certificate No. BAS01ATEX7156 to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This supplementary certificate shall be held with the original certificate.

The original certificate was issued by The Electrical Equipment Certification Service, Notified Body Number 0600, which retains responsibility for its original documentation. Baseefa (2001) Ltd., Notified Body Number 1180, is responsible only for the additional work relating to this supplementary certificate and any other supplementary certificate it has issued.

Baseefa (2001) Ltd. Customer Reference No. **0703** Project File No. **02/0523**

This certificate is granted subject to the general terms and conditions of Baseefa (2001) Ltd. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa (2001) Ltd.

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13 # Schedule

14 ## Certificate Number BAS01ATEX7156/1

15 Description of the variation to the Equipment or Protective System

Variation 1.1

To allow the MTL5046 Isolating Driver, 4/20mA, with smart communications and line fault detection to be supplied with or without plug-in terminals. The enclosure maintains a degree of protection of at least IP20 with the plug-in terminals removed.

16 Report Number

None

17 Special Conditions for Safe Use

None

18 Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

19 Drawings and Documents

Number	Sheet	Issue	Date	Description
CI5046-1	6	3	12.02	MTL5046 General Assembly and label