



EC-TYPE EXAMINATION CERTIFICATE

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

EC-Type Examination Certificate Number : **BAS01ATEX7168**

Equipment or Protective System: **MTL4032 PULSE ISOLATOR**

Manufacturer: **MEASUREMENT TECHNOLOGY LIMITED**

Address: **Luton, Bedfordshire, LU1 3JJ**

This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

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)

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.

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.

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.

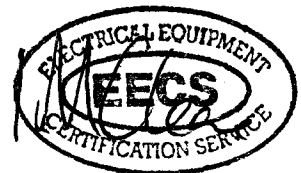
The marking of the equipment or protective system shall include the following:-

Ex II (1) GD [EEEx 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 0703/02/306

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.



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
13 December 2001



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Description of Equipment or Protective System

An MTL4032 Pulse Isolator is designed to restrict the transfer of energy from unspecified safe-area apparatus to one of four intrinsically safe circuits by the limitation of voltage and current. A transformer and two intrinsically safe opto-isolators provide galvanic isolation between the hazardous and non-hazardous area circuitry.

The apparatus isolates pulses from switch, proximity detectors, current pulse transmitters located in the hazardous area.

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

The apparatus comprises of a single isolating transformer, two I.S. opto-isolators, four detection circuits with zener-diode/diode/resistance combinations 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, pins 2 wrt 1

$$U_o = 10.5V$$

$$I_o = 14mA$$

$$P_o = 37mW$$

CON1, pins 3 wrt 1

$$U_o = 1.1V$$

$$I_o = 51mA$$

$$P_o = 14mW$$

CON1, pins 4 & 3 wrt 1

$$U_o = 28.0V$$

$$I_o = 93mA \text{ or } 143mA \text{ at } 2.9V$$

$$P_o = 0.65W$$

CON1, pins 5 & 4 wrt 1

$$U_o = 28.0V$$

$$I_o = 93mA$$

$$P_o = 0.65W$$



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$$C_i = 0$$

$$L_i = 0$$

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 $\mu\text{H}/\text{ohm}$
CON1, pin 2 wrt 1 OR CON1, pin 3 wrt 1				
IIC	2.41	14.8		983
IIB	16.80	53.4		1,333
IIA	75.00	112.7		1,333
CON1, pins 4 and 3 wrt 1				
IIC	0.083	1.63		55
IIB	0.650	7.72		210
IIA	2.150	15.39		444
CON1, pins 5 and 4 wrt 1				
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 $10\mu\text{H}$ i.e. the L_i of any attached apparatus is less than $10\mu\text{H}$, 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 94C2174 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.



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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
CI4032-1	2	2	11.01	MTL4032 Parts List
CI4032-1	3	3	01.96	MTL4032 Circuit Diagram
CI4032-1	4	3	10.97	MTL4032 Component Layout
CI4032-1	5	1	11.93	MTL4032 General Assembly
CI4032-1	6	1	11.93	MTL4032 Internal Construction
CI4032-1	7	3	10.97	MTL4032 PCB Track Layout
CI4032-1	8	1	11.93	MTL4032 Transformer Winding Details
CI4032-1	9	1	10.01	MTL4032 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

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