



EC-TYPE EXAMINATION CERTIFICATE

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

EC-Type Examination Certificate Number : **BAS00ATEX7149**

Equipment or Protective System: **MTL4041S REPEATER POWER SUPPLY**

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°

00(C)0689 dated 21 August 2000

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + Amendments 1 and 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:-

 II (1) G [EEx ia] IIC (T_{amb} = -20°C to +60°C)

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

File No: **EECS 0703/02/295**

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: 01298 28000 Fax: 01298 28244

I M CLEARE
DIRECTOR
23 August 2000



13 **Schedule**

14 **EC-TYPE EXAMINATION CERTIFICATE N° BAS00ATEX7149**

15 **Description of Equipment or Protective System**

The MTL4041S Repeater Power Supply is designed to; provide an interface between apparatus located in a hazardous area with unspecified apparatus located in a non-hazardous area, restrict the transfer of energy and provide galvanic isolation between circuits located in the non-hazardous and hazardous areas.

The apparatus comprises a number of electrical components including isolating transformers, fuses, resistors, diodes and zener diodes all mounted onto a printed circuit board (pcb) and housed within a plastic enclosure.

Connections to the hazardous area circuits are made via a connector on the front of the apparatus, numbered 1 to 6.

Connections to the non-hazardous area circuits are made via a connector on the rear of the apparatus, numbered 7 to 14 and the apparatus is intended to be mounted on a backplane.

Electrical Parameters

Non-hazardous area connector

CONNECTOR DESIGNATION	FUNCTION	U_m
Connector pins 9 and 11	Output current signal.	250V
Connector pins 13 and 14	For connection to a power supply of 20 to 35V d.c.	250V

Hazardous area connector pins 2 and 3 with respect to pins 4 and 5

$U_o = 22V$ $I_o = 165 \text{ mA}$ $P_o = 0.903W$

$C_i = 0$ $L_i = 0$

Load Parameters

The capacitance and either the inductance or the inductance to resistance (L/R) ratio of the load connected to the connector pins 1 to 4 must not exceed the following values:

GROUP	CAPACITANCE in μF	INDUCTANCE in mH	OR	L/R RATIO in $\mu H/ohm$
IIC	0.165	1.38		40
IIB	1.14	4.13		164
IIA	4.2	11.01		336



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EC-TYPE EXAMINATION CERTIFICATE N° BAS00ATEX7149

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Report No.

BASEEFA Certification Report No. 00(C)0689 dated 21 August 2000

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Special Conditions For Safe Use

None

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Essential Health and Safety Requirements

Essential Health and Safety Requirements not covered by Standards listed at item 9		
ESR	Subject	Compliance Report
1.1.3	Changes in characteristics of materials and combinations thereof	See Report No. 00(C)0689
1.2.2	Components for incorporation or replacement	See Report No. 00(C)0689
1.2.5	Additional means of protection	See Report No. 00(C)0689
1.2.7	Protection against other hazards	See Report No. 00(C)0689
1.4.2	Withstanding attack by aggressive substances	See Report No. 00(C)0689

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DRAWINGS

Number	Sheet	Issue	Date	Description
CI4041-6	1	1	7.00	Parts List
CI4041-6	2	1	7.00	Circuit Diagram
CI4041-6	3	1	7.00	Component Layout
CI4041-6	4	1	7.00	General assembly and Label
CI4041-6	5	1	7.00	Internal Construction
CI4041-6	6	1	7.00	PCB Layout
CI4041-6	7	1	7.00	Transformer Details
*CI4000-1	1	2	11.92	I.S. Transformer
‡CI4000-2	1 & 2	2	11.92	I.S. Transformer

* Drawing is held on BASEEFA Certificate No. Ex 91C2450.

‡ Drawings are held on BASEEFA Certificate No. Ex 92C2003.

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BASEEFA List Keywords
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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: BAS00ATEX7149/1**

4 **Equipment or Protective System: MTL4041S REPEATER POWER SUPPLY**

5 **Manufacturer: MEASUREMENT TECHNOLOGY LIMITED**

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

7 This supplementary certificate extends EC-Type Examination Certificate No. BAS00ATEX7149 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.

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

File No: EECS 0703/02/295



**I M CLEARE
DIRECTOR
15 November 2000**

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Electrical Equipment Certification Service
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SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE N° BAS00ATEX7149/1

Description of the Variation to the Equipment or Protective System

VARIATION ONE

To permit the individual voltage of zener diodes D1 to D4 to be raised to 14V max. These zener diodes continue to be two-thirds rated and the output of the apparatus remains at $U_o = 22V$.

Report No.

See original certificate.

Special Conditions For Safe Use

See original certificate.

Essential Health and Safety Requirements

See original certificate.

DRAWING

Number	Sheet	Issue	Date	Description
CI4041-6	1	2	09.00	MTL4041S Parts List

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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: BAS00ATEX7149/2**

4 **Equipment or Protective System: MTL4041S REPEATER POWER SUPPLY**

5 **Manufacturer: MEASUREMENT TECHNOLOGY LIMITED**

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

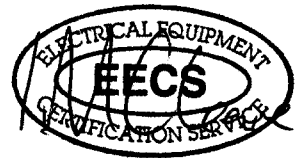
7 This supplementary certificate extends EC-Type Examination Certificate No. BAS00ATEX7149 to apply to equipment or protective systems designed and constructed in accordance with the specification set out in the Schedule of the said Certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

This Supplementary Certificate shall be held with the original Certificate.

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File No: EECS 0703/02/295

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I M CLEARE
DIRECTOR
12 March 2001



13 Schedule
14 SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE N° BAS00ATEX7149/2

Description of the Variation to the Equipment or Protective System

VARIATION 2.1

To permit minor electrical changes.

VARIATION 2.2

To permit minor electrical changes thus forming the MTL4041T Repeater Power Supply.

Electrical Parameters

Hazardous area connector pins 2 and 3 with respect to pins 4, 5 and 6

$$U_o = 22V \quad I_o = 165mA \quad P_o = 0.903W$$
$$C_i = 0 \quad L_i = 0$$

Hazardous area connector pins 4 and 5 with respect to pin 6

$$U_o = 1.1V \quad I_o = 53mA \quad P_o = 15mW$$
$$C_i = 0 \quad L_i = 0$$

Load Parameters

The capacitance and either the inductance or the inductance to resistance (L/R) ratio of the load connected to the connector pins 2 to 6 must not exceed the following values:

GROUP	CAPACITANCE in μF	INDUCTANCE in mH	OR	L/R RATIO in $\mu H/ohm$
IIC	0.165	1.38		40
IIB	1.14	4.13		164
IIA	4.2	11.01		336

An external intrinsically safe source with output parameters $U_o = 30V$, $I_o = 121mA$ and having a source resistance of U_o/I_o may be connected to pin 6 with respect to pins 4 and 5. Pins 2 and 3 must not be connected when this external source is used.

The capacitance and either the inductance or the inductance to resistance ratio (L/R) of the hazardous area cables must not exceed the values as detailed in the certificate relating to the external intrinsically safe source.

Report No.

None.



13 **Schedule**
14 **SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE N° BAS00ATEX7149/2**

Special Conditions For Safe Use

None.

Essential Health and Safety Requirements

See original certificate.

DRAWINGS ASSOCIATED WITH VARIATION 2.1

Number	Sheet	Issue	Date	Description
CI4041-6	1	3	2.01	Parts List

DRAWINGS ASSOCIATED WITH VARIATION 2.2

Number	Sheet	Issue	Date	Description
CI4041-7	1	1	1.01	Parts List
CI4041-7	2	1	1.01	Circuit Diagram
CI4041-7	3	1	1.01	Component Layout
CI4041-7	4	1	1.01	General Assembly and Label
CI4041-7	5	1	1.01	Internal Construction
CI4041-7	6	1	1.01	PCB Layout
CI4041-7	7	1	1.01	Transformer Details

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