



EC-TYPE EXAMINATION CERTIFICATE

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

EC-Type Examination Certificate Number : BAS02ATEX7211

Equipment or Protective System: **MTL5012S UNITED ELECTRIC ONE SERIES 2-WIRE
SENSOR/SWITCH, SOLID STATE OUTPUT INTERFACE
WITH PHASE REVERSAL AND LINE FAULT DETECTION**

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°

02(C)0414 dated 18 June 2002

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:-

II (I) 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 0703/02/340

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.



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JM CLEARE
DIRECTOR
27 June 2002



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Schedule

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Description of Equipment or Protective System

The MTL5012S United Electric One Series 2-wire sensor/switch, solid state output interface with phase reversal and line fault detection is a device designed to restrict the transfer of energy from unspecified non-hazardous area apparatus to intrinsically safe sensors located in a hazardous area, and provide galvanic isolation between the hazardous area and non-hazardous area circuits.

LED indication is provided to indicate power-on, line-fault and the status of the output. Switches permit the operator to specify the line fault detection and phase reversal requirements.

The MTL5012S apparatus comprises of two isolating transformers which provide galvanic isolation between the hazardous area and the non-hazardous area circuitry and a detection circuit 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 area and non-hazardous area connections.

Connector CON 4 and CON5

$U_m = 250V$ r.m.s.

The apparatus is designed to operate from a d.c. supply of up to 35V on the above terminals.

Connector CON1, pins 2/3 wrt 1

$U_o = 10.5V$

$I_o = 22mA$

$P_o = 58mW$

$C_i = 0 \mu F$

$L_i = 0 mH$

The capacitance and either the inductance or the inductance to resistance ratio (L_o/R_o) of the load connected to the output terminals of each channel must not exceed the following values:

GROUP	CAPACITANCE in μF	INDUCTANCE in mH	OR	L/R RATIO in $\mu H/ohm$
IIC	2.41	72		603
IIB	16.8	270		2095
IIA	75.0	531		2095



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16 Report No.

02(C)0414

17 Special Conditions For Safe Use

None.

18 Essential Health and Safety Requirements

ESSENTIAL HEALTH & SAFETY REQUIREMENTS not covered by Standards listed at (9)		
Clause	Subject	Compliance
1.1.3	Changes in characteristics of materials and combinations thereof	Report No 02(C)0414 Clause 6.1.1.3
1.2.2	Components for incorporation or replacement	Report No 02(C)0414 Clause 6.1.2.2
1.2.5	Additional means of protection	Report No 02(C)0414 Clause 6.1.1.5
1.2.7	Protection against other hazards	Report No 02(C)0414 Clause 6.1.2.7
1.4.2	Withstanding attack by aggressive substances	Report No 02(C)0414 Clause 6.1.4.2

19 DRAWINGS

Number	Sheets	Issue	Date	Description
CI 5012-2	1	1	05.02	Parts List for MTL5012S
CI 5012-2	2	1	05.02	Circuit Diagram
CI 5012-2	3	1	05.02	Component Layout
CI 5012-2	4	1	05.02	General Assembly and Label
CI 5012-2	5	1	05.02	PCB Track Layout
CI 5012-2	6	1	05.02	Transformer Winding Details
*CI5000-2	1	3	07.00	IS Transformer TFR300
*CI5000-2	2	3	07.00	IS Transformer TFR300
**CI5000-6	1	5	07.00	IS Transformer TFR309
**CI5000-6	2	5	07.00	IS Transformer TFR309

Drawings marked * are held on BASEEFA Certificate BAS01ATEX7157

Drawings marked ** are held on BASEEFA Certificate BAS01ATEX7147

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BASEEFA List Keywords
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