



## EC-TYPE EXAMINATION CERTIFICATE

1. **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 94/9/EC**
2. EC-Type Examination Certificate Number: **ITS03ATEX21172X**
3. Equipment or Protective System: **MTL646 Serial Text Display**
4. Manufacturer: **Measurement Technology Limited**
5. Address: **Power Court, Luton LU1 3JJ, Bedfordshire, UK**
6. This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
7. Intertek Testing and Certification Limited, notified body number 0359 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 Intertek Report Ref 03010243 Issue 1, dated May 2003 and Intertek Report Ref G101531841 dated February 2014.
8. Compliance with the Essential Health and Safety Requirements has been assured by compliance with standards EN 50014:1997 + Amds 1 & 2, EN 50020:2002 and EN 50284:1999 except in respect of those requirements referred to at item 16 of the Schedule.
9. 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.
10. This EC Type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.
11. The marking of the equipment or protective system shall include the following:-



II 1G Ex ia IIC T5 Ga

-40°C ≤Ta ≤+60°C

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**Registered No 3272281 Registered Office: Academy Place, 1-9 Brook Street, Brentwood, Essex, CM14 5NQ.**

**A M Smart**  
**Certification Officer**  
**Date: 25<sup>th</sup> February 2014**

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## SCHEDULE

### EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21172X

#### 13. Description of Equipment or Protective System

MTL647 Serial Text Display is panel mounting equipment designed to display text and simple graphics in the hazardous area. The MTL646 incorporates four push-buttons and two solid state outputs to form an operator interface for simple machine and process control applications.

The MTL646 comprises a 5051 Power Supply & Communications Board, EC-Type Examination Certificate Number ITS02ATEX2043U, an Alarm Board 01, EC-Type Examination Certificate Number ITS02ATEX2044U and a CPU and Display, EC-Type Examination Certificate Number ITS02ATEX2045U, all housed within a metallic enclosure. The enclosure provides a Degree of Protection of at least IP20.

Intrinsic safety is assured by the use of certified components, which provide limitation of voltage, current and power, limitation of capacitance and infallible segregation.

The maximum intrinsically safe input and output parameters are as follows:

##### **TB1 terminals 1 and 2**

$U_i = 25V$

$I_i = 108mA$

$P_i = 0.58W$

The equivalent parameters are:

$C_i = 0.01\mu F$

$L_i = 20\mu H$

##### **TB1 terminals 4 and 2**

$U_i = 14V$

$I_i = 108mA$

$P_i = 0.45W$

The equivalent parameters are:

$C_i = 0$

$L_i = 0$

##### **TB1 terminals 1, 2, 5 and 6**

$U_i = 20V$

$I_i = 139mA$

$P_i = 0.46W$

The equivalent parameters are:

$C_i = 0.01\mu F$

$L_i = 20\mu H$

##### **TBS terminals S1 to S7**

$U_o = 14.7V$

$I_o = 99mA$

$P_o = 0.6W$

The equivalent parameters are:

$C_i = 30\mu F$  at 6V

$C_i = 0.4\mu F$  at 14.7V

$L_i = 0.3mH$

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### EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21172X

#### TBA terminals A1 & A2, A3 & A4 (each Alarm channel)

$U_i = 28V$   $U_o = 1.49V$

$I_i = 200mA$   $I_o = 1\mu A$

$P_i = 0.85W$   $P_o = 3\mu W$

The equivalent parameters are:

$C_i = 0.04\mu F$

$L_i = 20\mu H$

For intrinsic safety considerations, under fault conditions the voltages, current and power at the above terminals do not exceed those specified in Clause 5.4 of EN 50020: 2002. The equivalent capacitance and inductance are the result of RF suppression components directly connected to the apparatus terminals.

#### 14. Report Number:

Intertek Report Ref 03010243 Issue 1, dated May 2003.

Intertek Report Ref: G101531841 dated February 2014.

#### 15. CONDITIONS OF CERTIFICATION:

##### (a). Special Conditions for safe use

- When installed in the Zone 0 potentially explosive atmosphere, the MTL646 Serial Text Display shall be installed such that even in the event of rare incidents, ignition source due to impact or friction between the aluminium enclosure of the instrument and iron/steel is excluded.

##### (b). Conditions For Use (Routine Tests)

- None

#### 16. Essential Health and Safety Requirements (EHSR's)

The relevant EHSR's have been identified and assessed in Intertek Report Ref 03010243 Issue 1, dated May 2003 and Intertek Report Ref: G101531841 dated February 2014.

#### 17. DOCUMENTS

EC-Type Examination Certificate No ITS02ATEX2036

EC-Type Examination Certificate No ITS02ATEX2036/1

#### 18. Drawings and Documents

Number:	Title:	Issue:	Date:
CI646-1	MTL646 Certification Label	1	5.03

The above drawing is common to EC-Type Examination Certificate No ITS03ATEX21173.

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## SCHEDULE

### EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21172X

#### 19. Details of Certificate Changes (for issue 2 and above):

**ISSUE 2** (Intertek Report Ref: G101531841 dated February 2014) to permit following changes:

- Assessment of the MTL646 Serial Text Display to the latest standards:  
EN 60079-0:2012  
EN 60079-11:2012  
EN 60079-26:2007
- Category of the instrument is changed from "ib" to "ia" and Special Condition for Safe Use added as the material limits of the enclosure are exceeded for equipment of ELP Ga.
- Addition of alternative Alarm Board 01 (PC175). The entity parameter, Li, is changed from 20  $\mu$ H to 8  $\mu$ H at the TBA Terminals for each Alarm channel when PC175 is fitted. The remaining entity parameters are unchanged.
- Application of new marking for the equipment as follows:  
 II 1G      Ex ia IIC T5 Ga       $-40^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$
- Update to drawings:

Number:	Title:	Issue:	Date:
CI646-1	Certification label Information MTL646 & MTL647 Serial Text Display	2	2.14

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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. **EC-Type Examination Certificate Number:** ITS03ATEX21172X/3
4. **Equipment or Protective System:** MTL646 Serial Text Display
5. **Manufacturer:** Measurement Technology Limited
6. **Address:** Great Marlings, Butterfield, Luton, Bedfordshire, LU2 8DL
7. This supplementary certificate extends EC-Type Examination Certificate Number ITS03ATEX21172X 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 variations specified in the Schedule attached to this certificate and the documents therein referred to.

Intertek Report Ref: 101659584MAN-001A dated May 2014.

This Supplementary Certificate shall be held with the original Certificate(s).

ITS 03ATEX21172 dated 23<sup>rd</sup> May 2003  
ITS 03ATEX21172X/1 dated 25<sup>th</sup> February 2013  
ITS 03ATEX21172X/2 dated 25<sup>th</sup> February 2014

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A Dickinson  
Certification Officer  
30 June 2014



## SCHEDULE

### SUPPLEMENTARY EC-TYPE EXAMINATION CERTIFICATE NUMBER ITS03ATEX21172X/3

#### VARIATION THREE

Description of the Variation to the Equipment or Protective System.

To permit the following change(s): -

- Change of company name only on nameplate on drawing CI646-1 to Measurement Technology Limited Luton, England.
- Change of address from "Power Court, Luton LU1 3JJ, Bedfordshire, UK" to "Great Marlings, Butterfield, Luton, Bedfordshire, LU2 8DL".

Report No.:

Intertek Report Ref.:10165984MAN-001A dated: May 2014

#### Conditions of Certification:

- Special Conditions for safe use
  - None
- Conditions of Manufacture
  - None

#### Essential Health and Safety Requirements (EHSR's)

See original certificates, the listed change to the Equipment or Protective System has not affected compliance.

Documents and Drawings : New

Title	Drawing / Document Reference	Revision / Level	Date
Certification label Information MTL646 & MTL647 Serial Text Displays	CI646-1	3	5.14

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