CERTIFICATE OF CONFORMITY

TESTING AND CERTIFICATION

UKAS PRODUCT CERTIFICATION 121

1. **Certificate ITS No. Ex 03E21196**

   Dated: 23 May 2003

2. **This Certificate is issued for the electrical system:**

   MTL646/647 SERIAL TEXT DISPLAY SYSTEM C

3. **Manufactured and submitted for Certification by:**

   MEASUREMENT TECHNOLOGY LIMITED

   Power Court, Luton, LU1 3JJ

4. This electrical system and any acceptable variation thereto is specified in the Schedule to this Certificate and the documents therein referred to.

5. ITS being an Approved Certification Body in accordance with Article 14 of the Council Directive of the European Communities of 18 December 1975 (76/117/EC) certifies that the system has been found to comply with harmonised European Standard: EN50 039: 1980

   and has successfully met the examination and test requirements recorded in the confidential reports identified below.

   ITS Report Number: 03010243 Issue 1 Dated: May 2003

6. The apparatus marking shall include the code:

   EEx ia IIC T5

7. It is the responsibility of the system certificate holder to supply the relevant documentation to the installer of the intrinsically safe electrical system referred to in this certificate.

8. The installer has the responsibility to ensure that the system conforms to the specification laid down in the Schedule to this certificate and has satisfied routine verifications and tests specified therein.

9. This system may be marked with the distinctive European Community mark specified in Annex II of European Council Directive 84/47/EEC as illustrated in the top left hand corner.

Certificate Approved by: R M Adams

R M Adams
Deputy Certification Manager

ITS Testing & Certification Limited
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http://www.etlsemko.com/uk
Registered No 3272281 Registered Office: 25 Savile Row London W1X 1AA

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Certificate ITS No. Ex 03E21196

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SYSTEM

MTL646/647 SERIAL TEXT DISPLAY SYSTEM C comprises:

1. Apparatus located in a non-hazardous area.

1.1 Apparatus which is unspecified except that it must not be supplied from nor contain under normal or abnormal conditions a source of potential with respect to earth in excess of 250 V rms or 250 V dc.

1.2 A galvanic isolator MTL5051 Serial Data Communications Isolator, Certificate BAS No. Ex 98D2009 or Certificate No BAS01ATEX7158

2 Apparatus which may be located in the hazardous area.

2.1 An MTL646 Serial Text Display, Certificate No. ITS03ATEX21172, coded EEx ia IIC T5 (Tamb = -40°C to 60°C), or

2.2 An MTL647 Serial Text Display, Certificate No. ITS03ATEX21173, coded EEx ia IIC T5 (Tamb = -40°C to 60°C).

2.3 Six optional switches meeting the requirements of Clause 5.4 of EN 50020:2002. The switches must be housed in an enclosure providing a Degree of Protection at least IP20, be installed in accordance with the requirements of Clause 6 of EN 50020:2002.

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3. Permissible interconnecting cables.

3.1 The cable must be a separate cable or a multicore cable which must be a Type 'A' or Type 'B' cable as defined in EN50 039 subject to the following.

a) The circuit from each barrier to be individually screened when used with Type A multicore cable.
b) The peak voltage of any other circuit with a Type B multicore cable must not exceed 60 V.

3.2 The capacitance and either inductance or inductance to resistance (L/R) ratio of the cable connected to the output (hazardous area) terminals 1 & 2, and 5 & 6 of the galvanic isolator MTL5051 must not exceed the following values.

Group	Capacitance μF	Inductance mH	or	L/R Ratio μ H/Ω
IIC	0.21	1.04		28
IIB	1.40	5.76		160
IIA	5.49	10.96		304

3.1 The capacitance and either inductance or inductance to resistance (L/R) ratio of the cable connected between the MTL646 or MTL647 terminals TBS and the switches must not exceed the following values.

Group	Capacitance μF	Inductance mH	or	L/R Ratio μ H/Ω
IIC	0.22	0.26		7.2
IIB	3.46	1.44		40
IIA	14.50	2.74		76

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DRAWINGS

Number	Issue	Date	Description
SCI-978, sheets 1 & 2	1	5.03	MTL646/647 Serial Text Display System C

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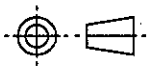
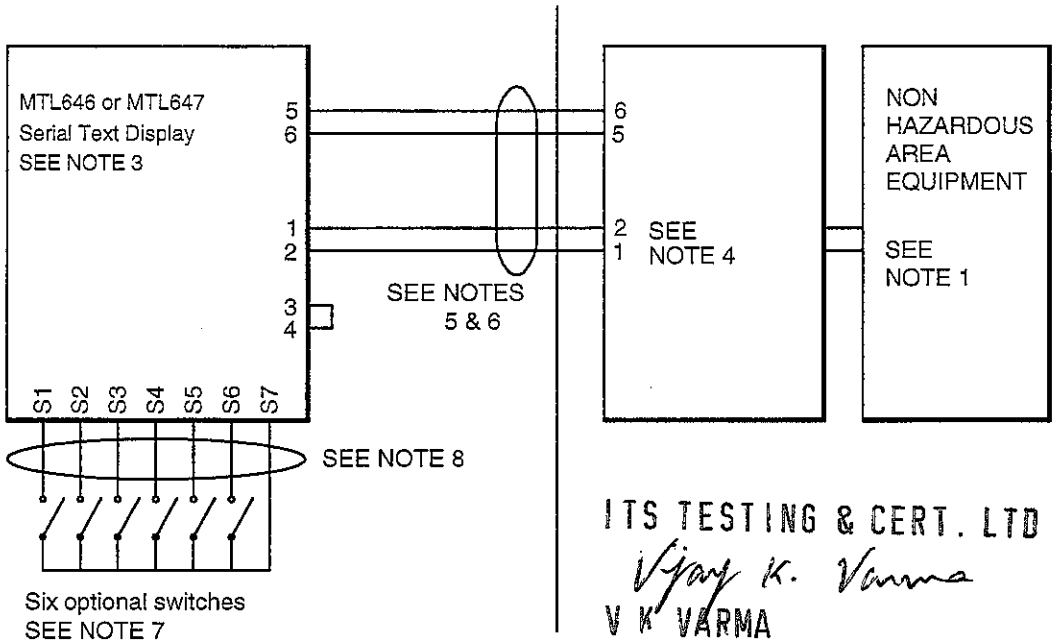
Dimensions in mm Do Not Scale Third Angle Projection



HAZARDOUS AREA NON-HAZARDOUS AREA



ITS TESTING & CERT. LTD
Vijay K. Varma
V K VARMA
APPROVED DRAWING
CERTIFICATE No
Ex 03E21196

1. Safe area apparatus - unspecified except that it must not be supplied from nor contain under normal or abnormal conditions a source of potential with respect to earth in excess of 250Vrms or 250Vdc.

2. The installation must comply with the installation requirements of EN60079:14:1997

3. Apparatus may be a MTL646 (ITS03ATEX21172) or MTL647 (ITS03ATEX21173) Serial Text Display.

4. Galvanically isolated supply to be:

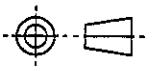
   MTL5051 Serial data communications isolator BAS01ATEX7158 or BAS No.Ex98D2009

5. The total capacitance and either total inductance or inductance to resistance (L/R) ratio of the cable connected between the output (hazardous area) terminals of the galvanically isolated supply and the MTL646 or MTL647 must not exceed the values given in table 1.

Table 1

Group	Capacitance µF	Inductance mH	or	L/R ratio µH/Ω
IIC	0.21	1.04		28
IIB	1.40	5.76		160
IIA	5.49	10.96		304

System Certificate No: Ex03E21196		Scale N/A
Certifying Authority: ITS Testing & Certification Limited		Sheet 1 of 2
Title	System information for MTL646 & MTL647 Serial Text Display Four wire using galvanic isolator	Drg. No. SCI-978



6. Wiring to terminals of separate intrinsically - safe circuits must be achieved using separate cables or by separate circuits within Type A or Type B multicore cables (as defined in clause 5.3 of EN50039), subject to the following:-
   a) The circuit is to be individually screened when contained within a Type A multicore cable.
   b) The peak voltage of any circuit within a Type B multicore cable must not exceed 60V.

7. Switches meeting the requirements of Clause 5.4 of EN50020:2002. They must have at least IP20 protection, be installed in accordance with the requirements of Clause 6 of EN50020:2002.

8. The total capacitance and either total inductance or inductance to resistance (L/R) ratio of the cable connected between the MTL646 or MTL647 and the switches must not exceed the values given in table 2.

Table 2

Group	Capacitance µF	Inductance mH	or	L/R ratio µH/Ω
IIC	0.22	0.26		7.2
IIB	3.46	1.44		40
IIA	14.50	2.74		76

9. The marking should normally appear on or adjacent to the principal item of electrical apparatus in the system or at the interface between the intrinsically safe and non-intrinsically safe circuits.

SYSTEM LABEL

Measurement Technology Ltd

MTL646 or 647
Serial Text Display system C

SYST ITS No. Ex03E21196
EEx ia IIC T5

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* NOTE: *
* No modification to be made without *
* reference/approval from ITS and *
* Measurement Technology Ltd *
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Vijay K. Varma
V K VARMA
APPROVED DRAWING
CERTIFICATE No
Ex 03E21196

System Certificate No: Ex03E21196		Scale N/A
Certifying Authority: ITS Testing & Certification Limited		Sheet 2 of 2
Title	System information for MTL646 & MTL647 Serial Text Display Four wire using galvanic isolator	Drg. No. SCI-978

Chd | Modification | Drn | Date | Iss
1 | 5.03 | CMB

SOLID EDGE

A4