



Factory Mutual Research

1151 Boston-Providence Turnpike
P.O. Box 9102
Norwood, Massachusetts 02062

CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following company:

Measurement Technology Limited
Power Court, Luton
Bedfordshire, England LU1 3JJ

For:

MTL5000 SERIES ISOLATING BARRIERS. Models MTL5011B, MTL5018, MTL5046, MTL5061

AIS/I,II,III/1/ABCDEFG - SCI-676, SCI-675, SCI-540, SCI-669; Entity
NI/1/2/ABCD

Max. Entity Parameters: Per applicable installation drawing.

Equipment Ratings: Associated Intrinsically Safe apparatus with connections to Class I, II, III Division 1, Group A, B, C, D, E, F and G in accordance with entity requirements and MTL Installation Drawings SCI-676, SCI-675, SCI-540, SCI-669; nonincendive for Class I, Division 2, Group A, B, C and D hazardous indoor locations.

Manufactured By: Measurement Technology Limited
Power Court, Luton
Bedfordshire, England LU1 3JJ

FACTORY MUTUAL RESEARCH CORPORATION

This certifies that the equipment described has been found to comply with the following Factory Mutual Research Corporation Approval Standards:

Approval Standard Class 3600 - 1989
Approval Standard Class 3610 - 1988
Approval Standard Class 3611 - 1986
Approval Standard Class 3810 - 1989

Approval Job Identification: 1D8A9.AX Issue Date: April 29, 1998

Subsequent Revision Reports/Date Approval Amended: None

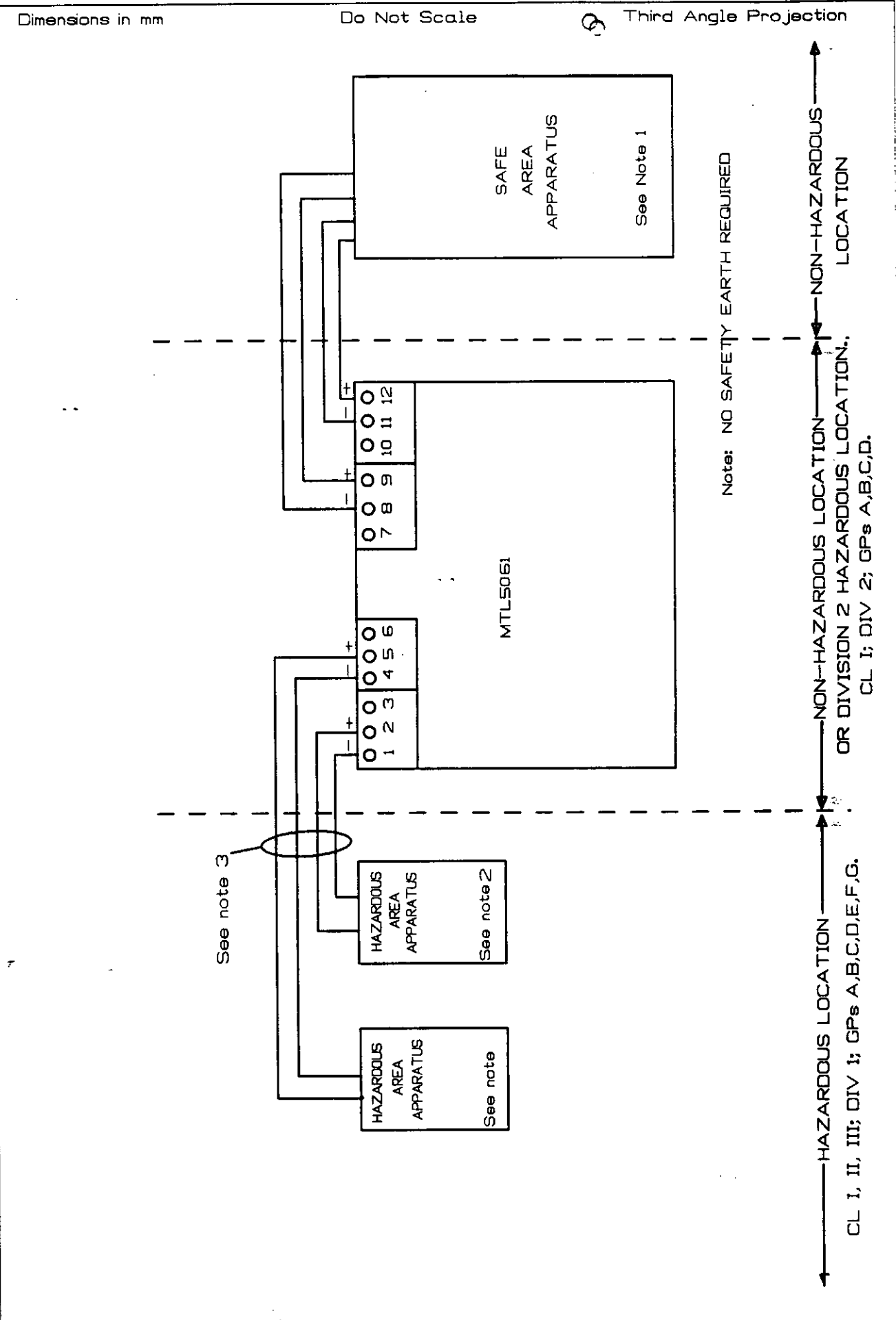
Factory Mutual Research Corporation



Frank J. McGowan, Manager
Instrumentation Section
Approval Division

6/3/98
Date

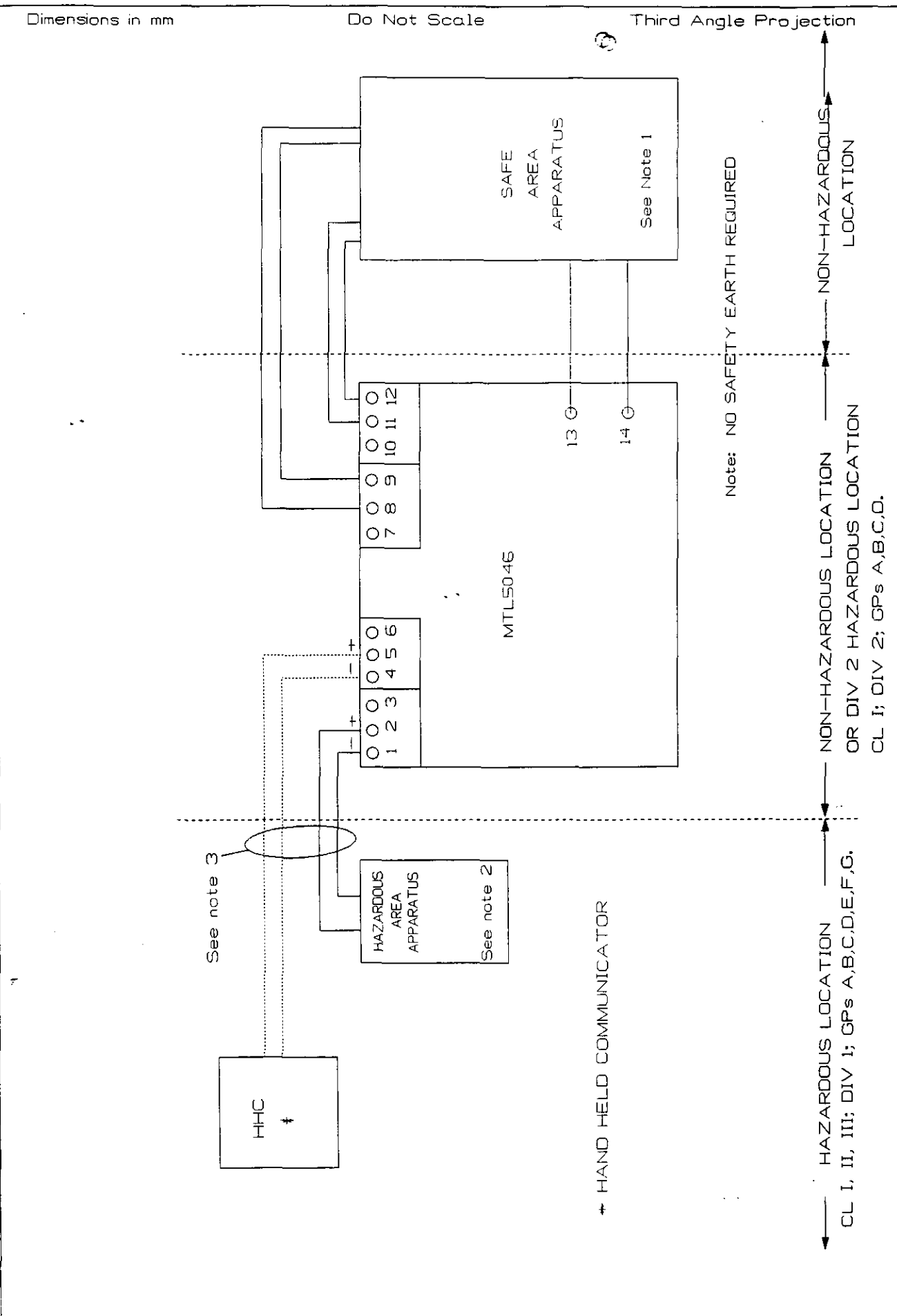
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System Certificate No:	Scale N/A
Certifying Authority: Factory Mutual	Sheet 1 of 2
Title MTL5061 Two channel fire/smoke detector interface, loop-powered.	Drg. No. SCI-669

Ckd		Dimensions in mm	Do Not Scale	Third Angle Projection									
Modification		<p><u>Note 1</u></p> <p>The Non-Hazardous Location (or Control Room) equipment must not generate or use more than 250 volts r.m.s</p> <p><u>Note 2</u></p> <p>The Hazardous Location equipment may be switches or thermocouples. Other apparatus such as RTD's, LED's and non-inductive resistors may also be used if the autoignition temperatures of the hazardous location is greater than T4 (275°F or 135°C). Certified devices with the correct Entity Concept parameters may also be used.</p> <p><u>Note 3</u></p> <p>Entity Concept Parameters for each channel of the MTL5061 ie channel 1 (Terminals 1, 2 & 3), are as follows:-</p> <p>Terminal 1 Wrt 2/3 $V_{oc} \leq 28V$ $I_{sc} \leq 93mA$ Terminal 4 Wrt 5/6 $V_{oc} \leq 28V$ $I_{sc} \leq 93mA$</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Groups A and B</td> <td style="padding: 5px;">$C_a \leq 0.13\mu F$</td> <td style="padding: 5px;">$L_a \leq 4.2mH$</td> </tr> <tr> <td style="padding: 5px;">Groups C and E</td> <td style="padding: 5px;">$C_a \leq 0.39\mu F$</td> <td style="padding: 5px;">$L_a \leq 12.6mH$</td> </tr> <tr> <td style="padding: 5px;">Groups D,F and G</td> <td style="padding: 5px;">$C_a \leq 1.04\mu F$</td> <td style="padding: 5px;">$L_a \leq 34.2mH$</td> </tr> </table> <p><u>Note 4</u></p> <p>For guidance on the installation see ANSI/ISA RP12.6</p> <p><u>Note 5</u></p> <p>The MTL5061 is Associated Apparatus and when mounted in the appropriate enclosure (See notes 6 and 7) is suitable for installation in the following area:-</p> <p>Non-Hazardous Locations Class I, Division 2, Groups A,B,C and D, Hazardous Locations Class II, Division 2, Groups F and G Hazardous Locations Class III, Division 2, Hazardous Locations</p> <p><u>Note 6</u></p> <p>Associated Apparatus must be installed in accordance with the National Electrical Code in an enclosure meeting the requirements of ANSI/ISA-S82.</p> <p><u>Note 7</u></p> <p>Use FRMC Approved or NRTL Listed dust-ignition proof enclosure(s) Appropriate for the environmental protection in class II, Division 2, Groups F and G; Class III, Division 2 Hazardous Locations.</p> <p><u>Note 8</u></p> <p>When the MTL5061 is installed in Division 2 Hazardous locations, a warning label must be prominently affixed near the unit(s) which warns that MTL5061 must not be removed or inserted unless the area is known to be non-hazardous.</p>			Groups A and B	$C_a \leq 0.13\mu F$	$L_a \leq 4.2mH$	Groups C and E	$C_a \leq 0.39\mu F$	$L_a \leq 12.6mH$	Groups D,F and G	$C_a \leq 1.04\mu F$	$L_a \leq 34.2mH$
Groups A and B	$C_a \leq 0.13\mu F$	$L_a \leq 4.2mH$											
Groups C and E	$C_a \leq 0.39\mu F$	$L_a \leq 12.6mH$											
Groups D,F and G	$C_a \leq 1.04\mu F$	$L_a \leq 34.2mH$											
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MEASUREMENT TECHNOLOGY LTD Luton, England Copyright Reserved - Written Permission to Copy Should be Obtained													
Modification		<p>System Certificate No:</p> <p>Certifying Authority: Factory Mutual</p> <p>Title MTL5061 Two channel fire/smoke detector interface, loop-powered.</p>											
Scale	N/A												
Sheet	2 of 2												
Org. No.	SCI-669												
Date	9-96												
Iss	1												

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1	1.97	PS							



System Certificate No:		Scale	N/A
Certifying Authority: Factory Mutual		Sheet	1 of 2
Title MTL5046 Isolating driver, 4/20mA, with smart communications and line fault detection		Drng. No.	SCI-540

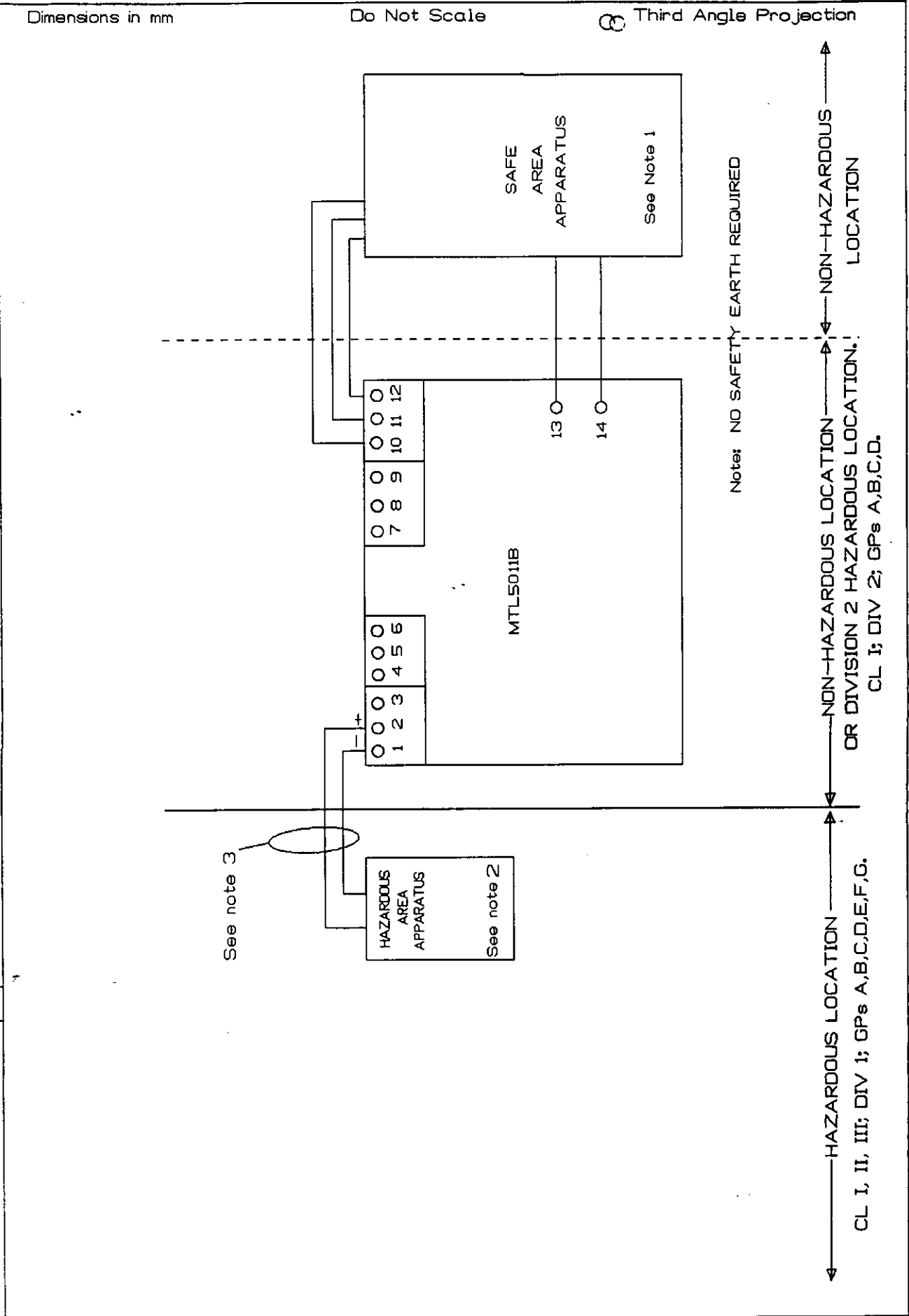
Ctd		Dimensions in mm	Do Not Scale	Third Angle Projection									
Modification		<p><u>Note 1</u></p> <p>The Non-Hazardous Location (or Control Room) equipment must not generate or use more than 250 volts r.m.s</p> <p><u>Note 2</u></p> <p>The Hazardous Location equipment may be switches or thermocouples. Other apparatus such as RTD's, LED's and non-inductive resistors may also be used if the autoignition temperatures of the hazardous location is greater than T4 (275°F or 135°C). Certified devices with the correct Entity Concept parameters may also be used.</p> <p><u>Note 3</u></p> <p>Entity Concept Parameters for each channel of the MTL5046 ie channel 1 (Terminals 1 & 2),</p> <p>Terminal 1 Wrt 2 $V_{oc} \leq 28V$ $I_{sc} \leq 93mA$</p>											
Dfn		<table border="1" style="width:100%; border-collapse: collapse; text-align:center;"> <tr> <td style="width:33%;">Groups A and B</td> <td style="width:33%;">$C_a \leq 0.13\mu F$</td> <td style="width:33%;">$L_a \leq 4.2mH$</td> </tr> <tr> <td>Groups C and E</td> <td>$C_a \leq 0.39\mu F$</td> <td>$L_a \leq 12.6mH$</td> </tr> <tr> <td>Groups D,F and G</td> <td>$C_a \leq 1.04\mu F$</td> <td>$L_a \leq 34.2$</td> </tr> </table>			Groups A and B	$C_a \leq 0.13\mu F$	$L_a \leq 4.2mH$	Groups C and E	$C_a \leq 0.39\mu F$	$L_a \leq 12.6mH$	Groups D,F and G	$C_a \leq 1.04\mu F$	$L_a \leq 34.2$
Groups A and B	$C_a \leq 0.13\mu F$				$L_a \leq 4.2mH$								
Groups C and E	$C_a \leq 0.39\mu F$				$L_a \leq 12.6mH$								
Groups D,F and G	$C_a \leq 1.04\mu F$	$L_a \leq 34.2$											
Date													
Iss		<p>MEASUREMENT TECHNOLOGY LTD Luton, England Copyright Reserved -- Written Permission to Copy Should be Obtained</p>											
Dfn		<p><u>Note 4</u></p> <p>For guidance on the installation see ANSI/ISA RP12.6</p> <p><u>Note 5</u></p> <p>The MTL5046 is Associated Apparatus and when mounted in the appropriate enclosure (See notes 6 and 7) is suitable for installation in the following area:--</p> <p>Non-Hazardous Locations Class I, Division 2, Groups A,B,C and D, Hazardous Locations Class II, Division 2, Groups F and G Hazardous Locations Class III, Division 2, Hazardous Locations</p> <p><u>Note 6</u></p> <p>Associated Apparatus must be installed in accordance with the National Electrical Code in an enclosure meeting the requirements of ANSI/ISA-S82.</p> <p><u>Note 7</u></p> <p>Use FMRC Approved or NRTL Listed dust-ignition proof enclosure(s) Appropriate for the environmental protection in class II, Division 2, Groups F and G; Class III, Division 2 Hazardous Locations.</p> <p><u>Note 8</u></p> <p>When the MTL5046 is installed in Division 2 Hazardous locations, a warning label must be prominently affixed near the unit(s) which warns that the MTL5046 must not be removed or inserted unless the area is known to be non-hazardous.</p>											
Date	PS	System Certificate No:		Scale N/A									
Iss	1-97	Certifying Authority: Factory Mutual		Sheet 2 of 2									
Iss	1	Title MTL5046 Isolating driver, 4/20mA with smart communications and line fault detection		Org. No. SCI-540									

Ckd	Modification			Date	Dwn	Modification
1	BSE/PS					MEASUREMENT TECHNOLOGY LTD Luton, England Copyright Reserved - Written Permission to Copy Should be Obtained
<p style="text-align: center;">Dimensions in mm Do Not Scale Third Angle Projection</p> <p style="text-align: center;">Note: NO SAFETY EARTH REQUIRED</p> <p style="text-align: center;">HAZARDOUS LOCATION OR DIVISION 2 HAZARDOUS LOCATION, CL 1, II, III; DIV 1; GPs A,B,C,D,E,F,G.</p> <p style="text-align: center;">NON-HAZARDOUS LOCATION, CL 1; DIV 2; GPs A,B,C,D.</p>						
System Certificate No:				Scale N/A		
Certifying Authority: Factory Mutual				Sheet 1 of 2		
Title MTL5018 Single Channel, Switch/Proximity Detector Interface, with Phase Reversal				Drg. No. SCI-675		

Ctd		Dimensions in mm	Do Not Scale	Third Angle Projection									
Modification		<p><u>Note 1</u></p> <p>The Non-Hazardous Location (for Control Room) equipment must not generate or use more than 250 volts r.m.s</p> <p><u>Note 2</u></p> <p>The Hazardous Location equipment may be switches or thermocouples. Other apparatus such as RTD's, LED's and non-inductive resistors may also be used if the autoignition temperatures of the hazardous location is greater than T4 (275°F or 135°C). Certified devices with the correct Entity ConceptParameters may also be used.</p> <p><u>Note 3</u></p> <p>Entity Concept Parameters for each channel of the MTL5018 ie channel 1 (Terminals 1 & 2), channel 2 (Terminals 4 & 5) are as follows:-</p> <p>Terminal 1 Wrt 2/3 $V_{oc} \leq 10.5V$ $I_{sc} \leq 14mA$</p> <p>Terminal 4 Wrt 5/6 $V_{oc} \leq 10.5V$ $I_{sc} \leq 14mA$</p> <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Groups A and B</td> <td style="padding: 5px;">$C_a \leq 2.4\mu F$</td> <td style="padding: 5px;">$L_a \leq 165mH$</td> </tr> <tr> <td style="padding: 5px;">Groups C and E</td> <td style="padding: 5px;">$C_a \leq 7.2\mu F$</td> <td style="padding: 5px;">$L_a \leq 495mH$</td> </tr> <tr> <td style="padding: 5px;">Groups D,F and G</td> <td style="padding: 5px;">$C_a \leq 19.2\mu F$</td> <td style="padding: 5px;">$L_a \leq 1000mH$</td> </tr> </table> <p><u>Note 4</u></p> <p>For guidance on the installation see ANSI/ISA RP12.6</p> <p><u>Note 5</u></p> <p>The MTL5018 is Associated Apparatus and when mounted in the appropriate enclosure (See notes 6 and 7) is suitable for installation in the following area:-</p> <p>Non-Hazardous Locations Class I, Division 2, Groups A,B,C and D, Hazardous Locations Class II, Division 2, Groups F and G Hazardous Locations Class III, Division 2, Hazardous Locations</p> <p><u>Note 6</u></p> <p>Associated Apparatus must be installed in accordance with the National Electrical Code in an enclosure meeting the requirements of ANSI/ISA-S82.</p> <p><u>Note 7</u></p> <p>Use FRMC Approved or NRTL Listed dust-ignition proof enclosure(s) Appropriate for the environmental protection in class II, Division 2, Groups F and G; Class III, Division 2 Hazardous Locations.</p> <p><u>Note 8</u></p> <p>When the MTL5018 is installed in Division 2 Hazardous locations, a warning label must be prominently affixed near the unit(s) which warns that the MTL5018 must not be removed or inserted unless the area is known to be non-hazardous.</p>			Groups A and B	$C_a \leq 2.4\mu F$	$L_a \leq 165mH$	Groups C and E	$C_a \leq 7.2\mu F$	$L_a \leq 495mH$	Groups D,F and G	$C_a \leq 19.2\mu F$	$L_a \leq 1000mH$
Groups A and B	$C_a \leq 2.4\mu F$	$L_a \leq 165mH$											
Groups C and E	$C_a \leq 7.2\mu F$	$L_a \leq 495mH$											
Groups D,F and G	$C_a \leq 19.2\mu F$	$L_a \leq 1000mH$											
Date	Dm	Iss											
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System Certificate No:			Scale	N/A									
Certifying Authority: Factory Mutual			Sheet	2 of 2									
Title MTL5018 dual channel switch/proximity interface Installation Diagram			Drg. No.	SCI-675									

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System Certificate No:	Scale	N/A
Certifying Authority: Factory Mutual	Sheet	1 of 2
Title MTL5011B Single Channel, Switch/Proximity Detector Interface, with Phase Reversal	Org. No.	SCI-676

Iss	Date	Dm	Modification	Ctd

Dimensions in mm Do Not Scale Third Angle Projection

Note 1
The Non-Hazardous Location (or Control Room) equipment must not generate or use more than 250 volts r.m.s

Note 2
The Hazardous Location equipment may be switches or thermocouples. Other apparatus such as RTD's, LED's and non-inductive resistors may also be used if the autoignition temperatures of the hazardous location is greater than T4 (275°F or 135°C). Certified devices with the correct Entity Concept parameters may also be used.

Note 3
Entity Concept Parameters for each channel of the MTL5011B ie channel 1 (Terminals 1 & 2), are as follows:-
Terminal 1 Wrt 2/3 $V_{oc} \leq 10.5V$ $I_{sc} \leq 14mA$

Groups A and B	$C_a \leq 2.4\mu F$	$L_a \leq 165mH$
Groups C and E	$C_a \leq 7.2\mu F$	$L_a \leq 495mH$
Groups D,F and G	$C_a \leq 19.2\mu F$	$L_a \leq 1000mH$

Note 4
For guidance on the installation see ANSI/ISA RP12.6

Note 5
The MTL5011B is Associated Apparatus and when mounted in the appropriate enclosure (See notes 6 and 7) is suitable for installation in the following area:-
Non-Hazardous Locations
Class I, Division 2, Groups A,B,C and D, Hazardous Locations
Class II, Division 2, Groups F and G Hazardous Locations
Class III, Division 2, Hazardous Locations

Note 6
Associated Apparatus must be installed in accordance with the National Electrical Code in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7
Use FRMC Approved or NRTL Listed dust-ignition proof enclosure(s) Appropriate for the environmental protection in class II, Division 2, Groups F and G; Class III, Division 2 Hazardous Locations.

Note 8
When the MTL5011B is installed in Division 2 Hazardous locations, a warning label must be prominently affixed near the unit(s) which warns that the MTL5011B must not be removed or inserted unless the area is known to be non-hazardous.

System Certificate No:		Scale N/A
Certifying Authority: Factory Mutual		Sheet 2 of 2
Title MTL5011B Single Channel, Switch/Proximity Detector Interface, with Phase Reversal		Org. No. SCI-676

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