



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 MTL5021, MTL5025, MTL5041, MTL5042, MTL5044, MTL5045, MTL5049

AIS/I,II,III/1/ABCDEFG - SCI-581, SCI-577, SCI-569, SCI-561, SCI-565, SCI-553, SCI-549; Entity
NI/II/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-581, SCI-577, SCI-569, SCI-561, SCI-565, SCI-553, SCI-549; nonincendive for Class I, Division 2, Group A, B, C and D hazardous indoor locations.

and For:

MTL5000 SERIES ISOLATING BARRIER. Model MTL5022

AIS/I,II,III/1/CDEFG - SCI-585; Entity
NI/II/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 C, D, E, F and G in accordance with entity requirements and MTL Installation Drawing SCI-585; 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

3Z9A8.AX-1

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: 3Z9A8.AX Issue Date: May 31, 1996

Subsequent Revision Reports/Date Approval Amended:



None

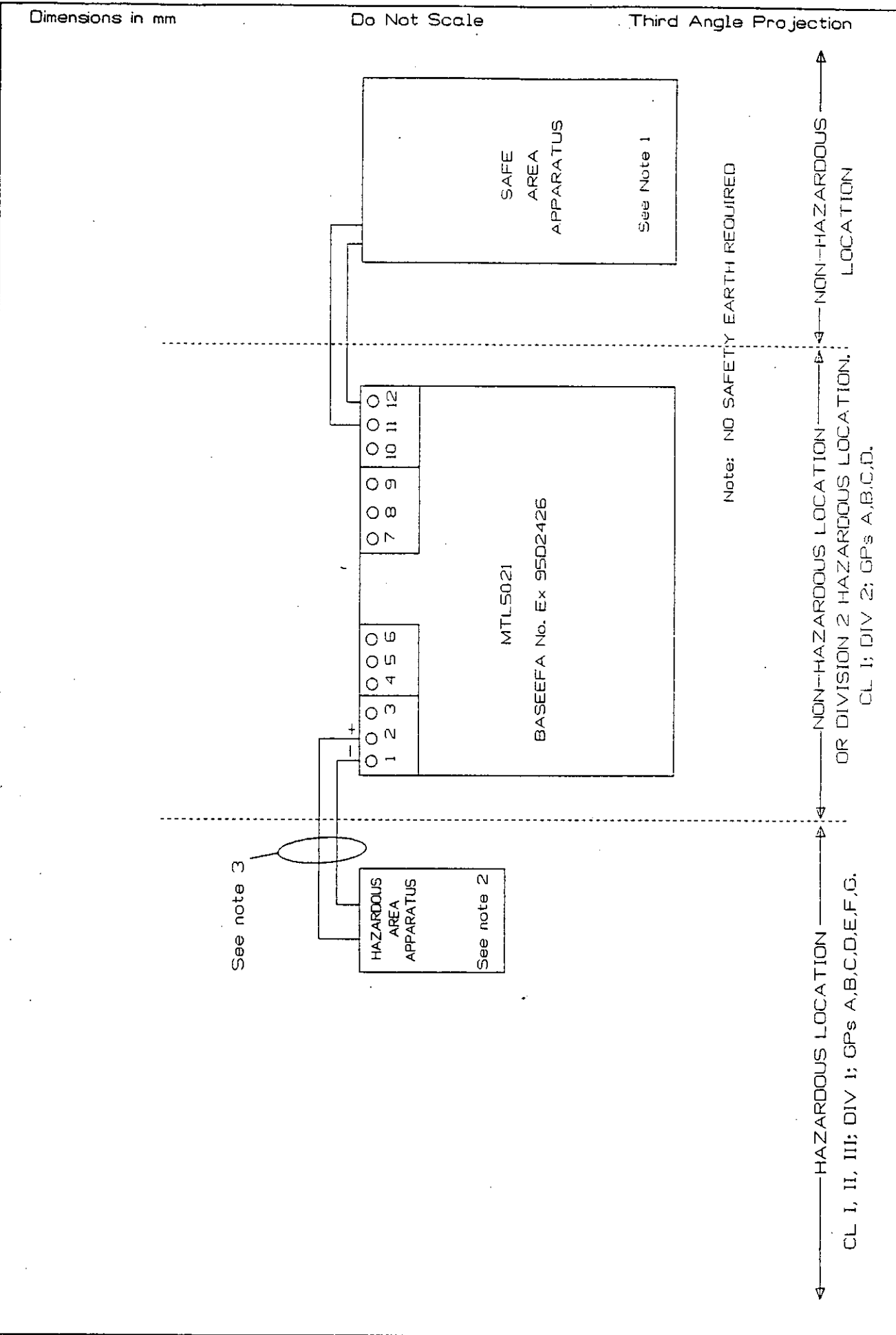
Factory Mutual Research Corporation



Frank J. McGowan, Manager
Instrumentation Section
Approval Division

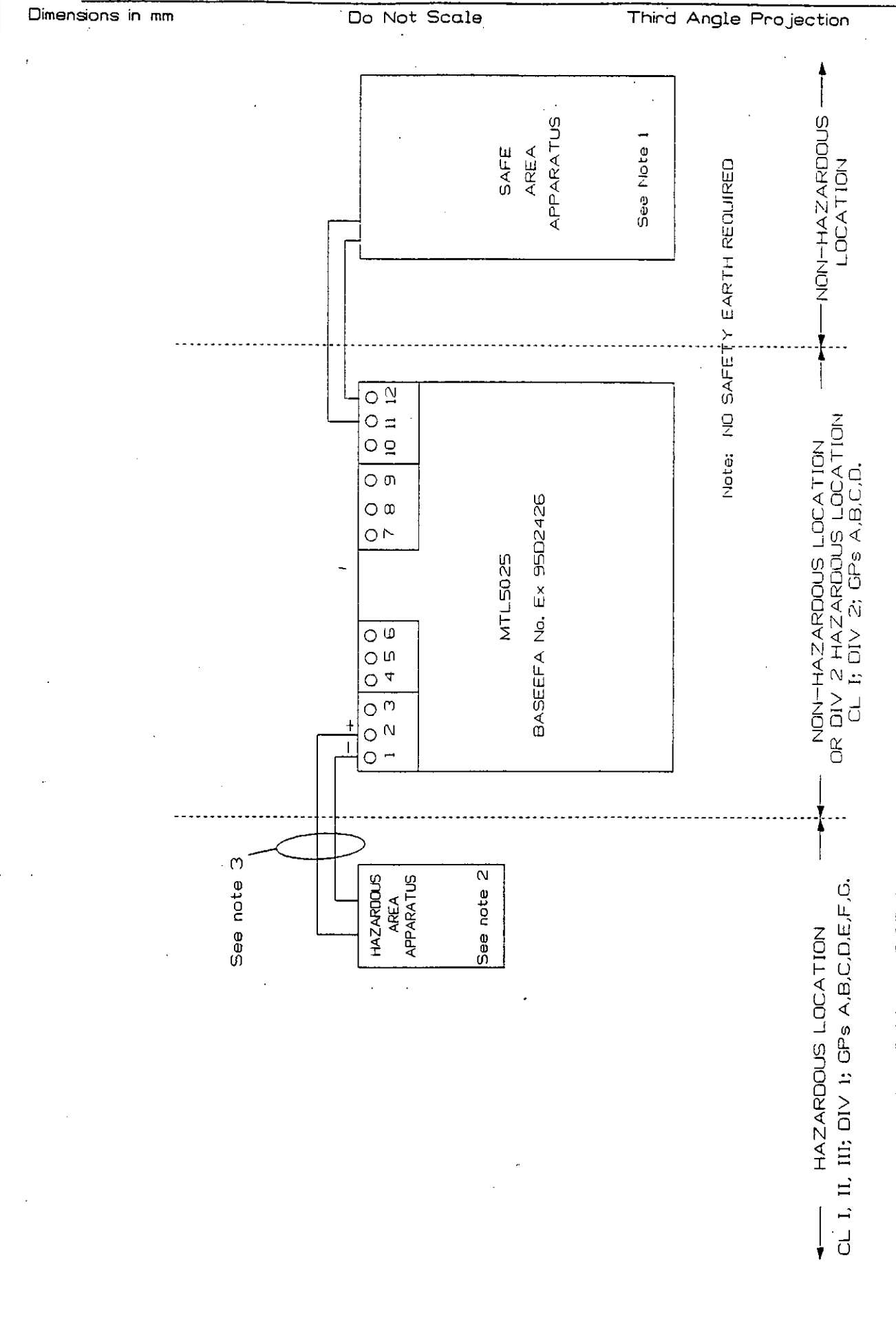
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System Certificate No:	Scale	N/A
Certifying Authority: Factory Mutual	Sheet	1 of 2
Title MTL5021 Loop-powered solenoid/alarm driver IIC	Drg. No.	SCI-581

Iss	Date	Drn	Iss	Date	Drn	Modification	Modification	CK'd
1	6.95	PS						



System Certificate No:	Scale	N/A
Certifying Authority: Factory Mutual	Sheet	1 of 2
Title MTL5025 Low-current loop-powered solenoid/alarm driver, IIC	Drg. No.	SCI-577

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 MTL5021 ie channel 1 (Terminals 1 & 2), are as follows:-

Terminal 1 Wrt 2/3 $V_{oc} \leq 25V$ $I_{sc} \leq 93mA$

Groups A and B	$C_a \leq 0.17\mu F$	$L_a \leq 4.2mH$
Groups C and E	$C_a \leq 0.51\mu F$	$L_a \leq 12.6mH$
Groups D,F and G	$C_a \leq 1.36\mu F$	$L_a \leq 33.6mH$

Note 4

For guidance on the installation see ANSI/ISA RP12.5

Note 5

The MTL5025 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

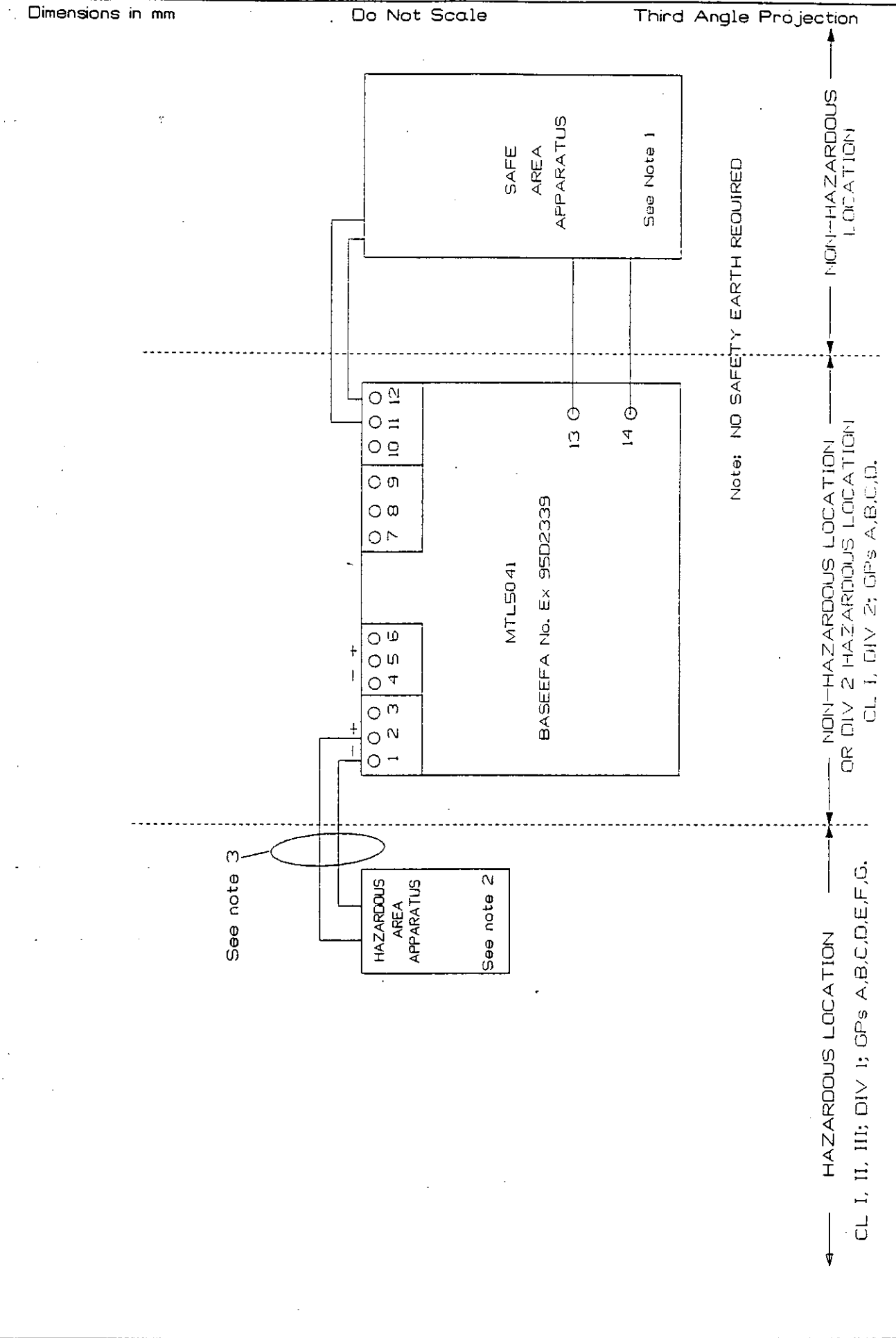
Use FRMC Approved or NRTL Listed dust-ignition proof enclosure(s) Appropriate for the environmental protection in class II, Division 2, Groups F and G; Class III, Division 2 Hazardous Locations.

Note 8

When the MTL5025 is installed in Division 2 Hazardous locations, a warning label must be prominently affixed near the unit(s) which warns that the connectors of the MTL5025 must not be removed or inserted unless the area is known to be non-hazardous.

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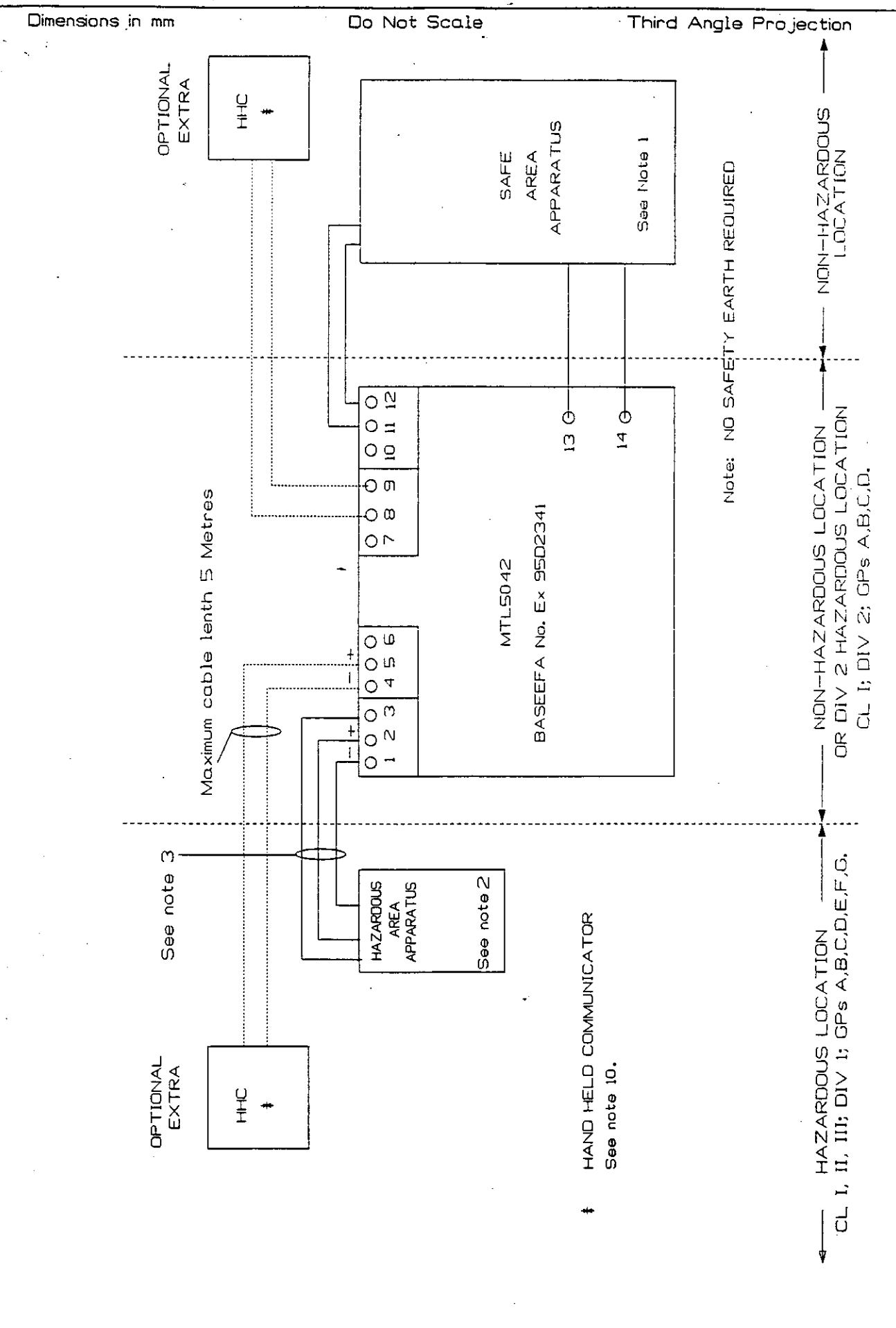
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System Certificate No:	Ex95D2340	Scale	N/A
Certifying Authority:	Factory Mutual	Sheet	1 of 2
Title	MTL5041 Repeater Power Supply 4/20mA. for 2-wire Transmitters	Org. No.	SCI-569

			Dimensions in mm	Do Not Scale	Third Angle Projection									
Ctd	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 MTL5041 ie channel 1 (Terminals 1 & 2), are as follows:-</p> <p>Terminal 1 Wrt 2/3 $V_{oc} \leq 28V$ $I_{sc} \leq 93mA$</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;">$C_a \leq 0.13\mu F$</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;">$L_a \leq 33.5mH$</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 MTL5041 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 MTL5041 is installed in Division 2 Hazardous locations, a warning label must be prominently affixed near the unit(s) which warns that the MTL5041 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	$C_a \leq 1.04\mu F$	$L_a \leq 33.5mH$
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	$C_a \leq 1.04\mu F$	$L_a \leq 33.5mH$												
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MEASUREMENT TECHNOLOGY LTD Luton, England Copyright Reserved - Written Permission to Copy Should be Obtained			
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System Certificate No: Ex9502342		Scale N/A
Certifying Authority: Factory Mutual		Sheet 1 of 2
Title: MTL5042 Repeater Power Supply 4/20mA, for 2 or 3-wire Transmitters (With Smart Communications)		Drg. No. SCI-561

Ckd	Modification	Iss	Date	Drm	Iss	Date	Drm	Ckd	Modification	Iss	Date	Drm	Ckd	Modification	Iss	Date	Drm	Ckd	Modification	Iss	Date	Drm
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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 MTL5042 ie channel 1 (Terminals 1 & 2), are as follows:-
Terminal 1 Wrt 2/3 $V_{oc} \leq 28V$ $I_{sc} \leq 93mA$

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	$C_a \leq 1.04\mu F$	$L_a \leq 33.6mH$

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

Note 5
The MTL5042 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.

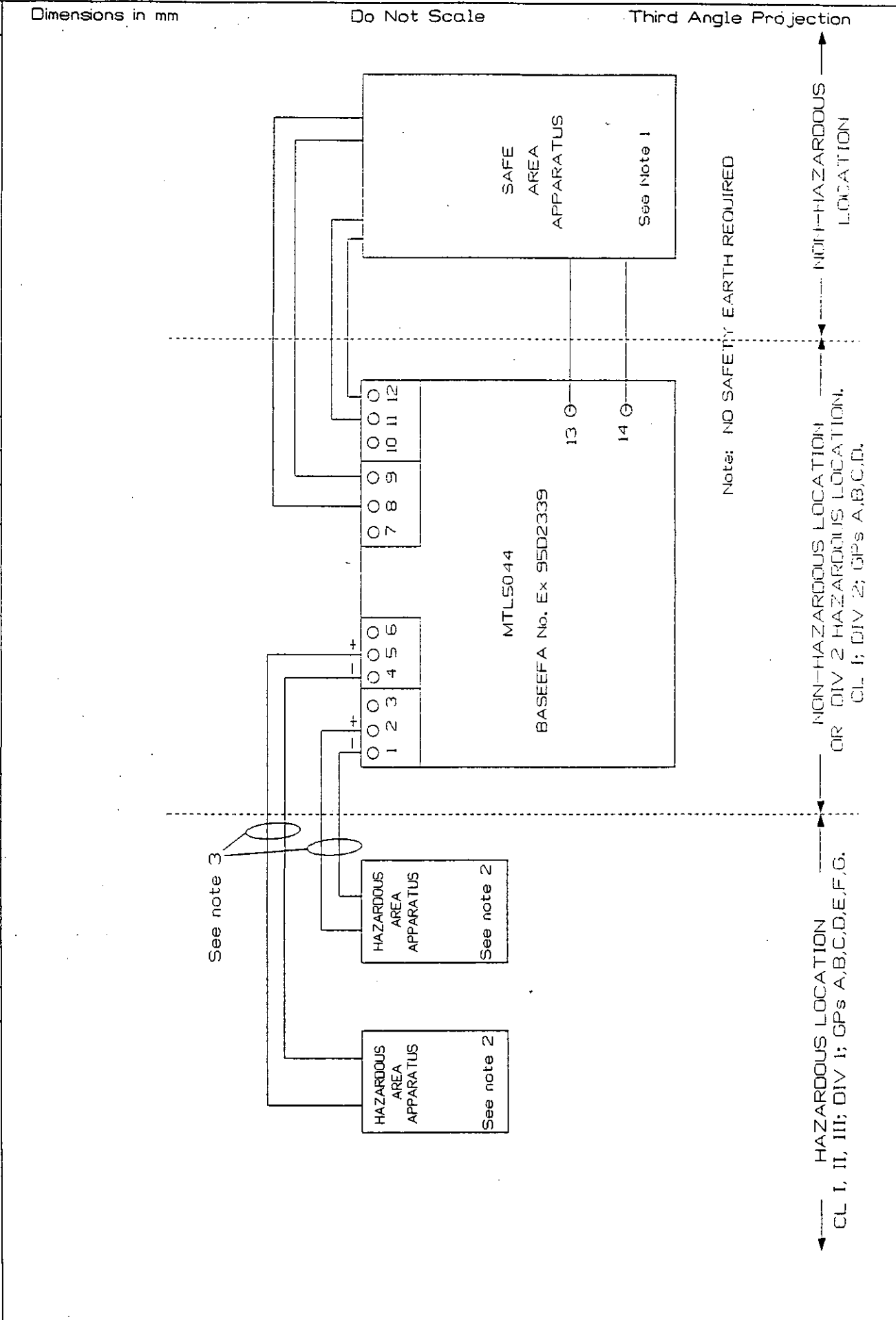
Note 8
When the MTL5042 is installed in Division 2 Hazardous locations, a warning label must be prominently affixed near the unit(s) which warns that the MTL5042 must not be removed or inserted unless the area is known to be non-hazardous.

Note 9
When the MTL5042 is installed in Division 2 Hazardous locations, a warning label must be prominently affixed near the unit(s) which warns that the MTL5041 must not be removed or inserted unless the area is known to be non-hazardous.

Note 10
The HHC is a MTL611 Hand Held Communicator and interface which are FM Approved under Approval No JI. 1W5A1.AX. The MTL611 and interface may also be used in the Non-Hazardous or Division 2 Hazardous Locations.

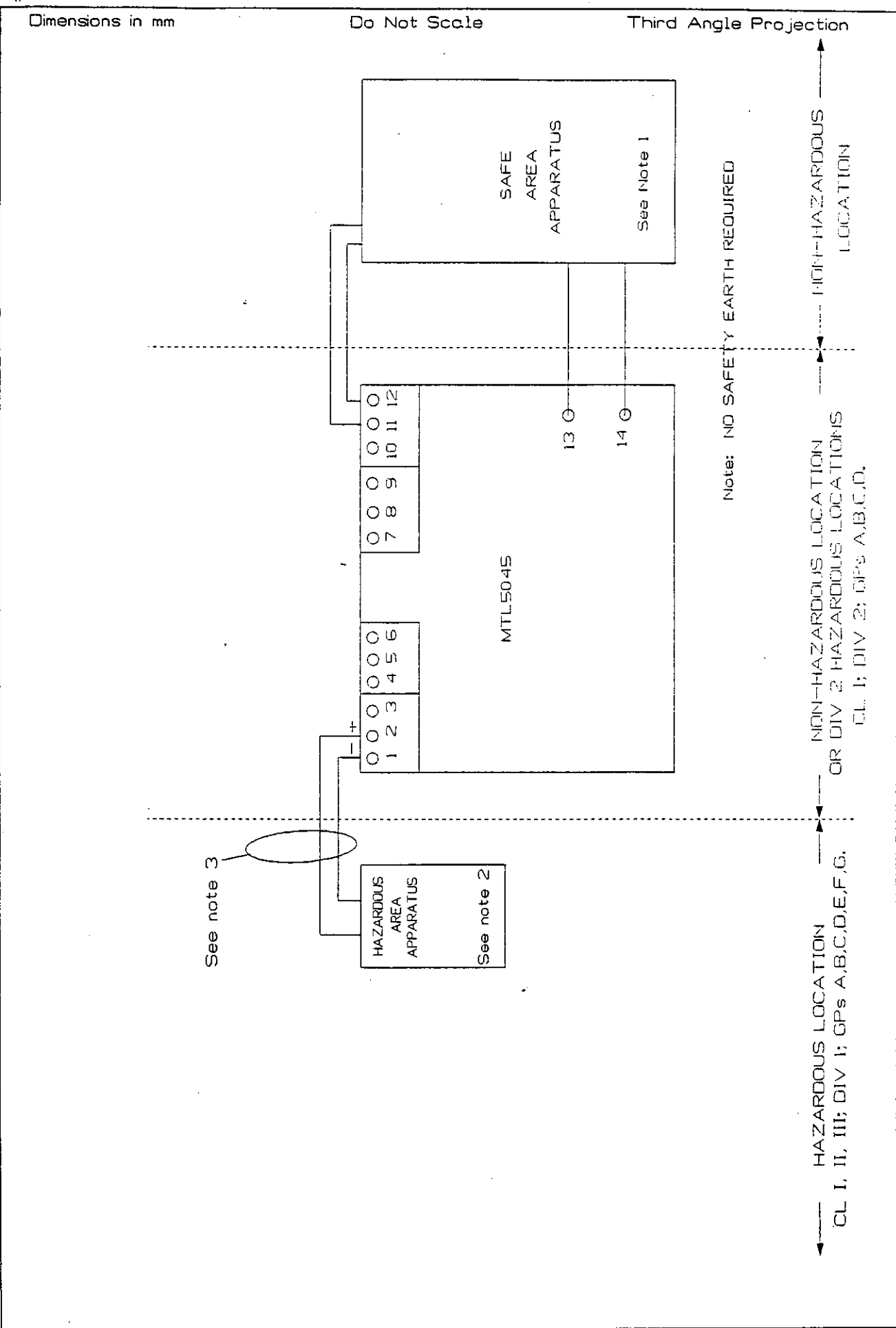
System Certificate No: Ex95D2342		Scale N/A
Certifying Authority: Factory Mutual		Sheet 2 of 2
Title MTL5042 Repeater Power Supply 4/20mA, for 2 or 3-Wire Transmitters [With Smart Communications]		Drg. No. SCI-561

Iss	Date	Drn	Modification	Ckd
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Iss	Date	Drn	Modification	Ckd



System Certificate No:	Ex95D2340	Scale	N/A
Certifying Authority:	Factory Mutual	Sheet	1 of 2
Title	MTL5044 Two-channel Repeater Power Supply, 4/20mA, for 2-wire Transmitters Factory Mutual	Org. No.	SCI-565

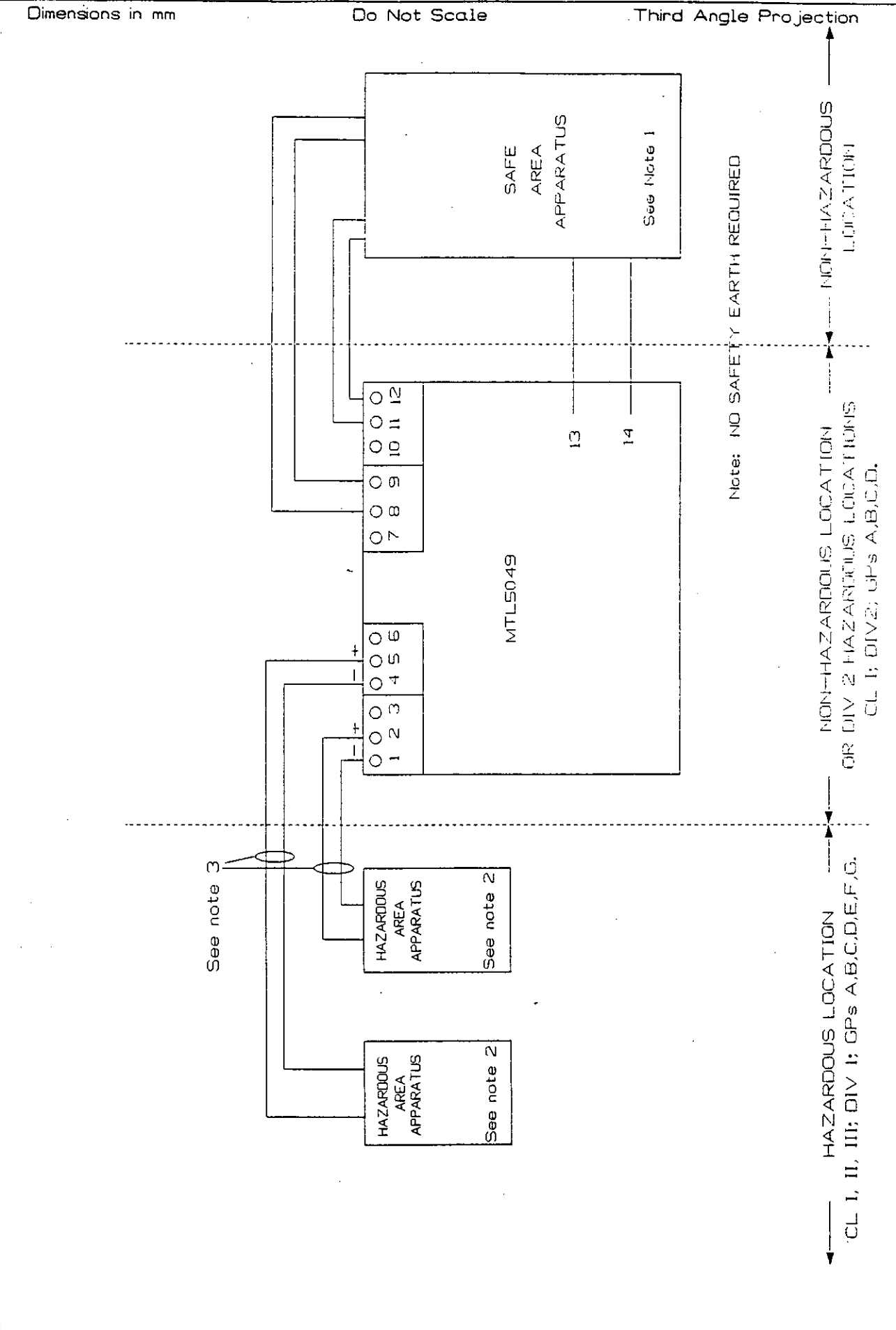
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Title		Certifying Authority:		System Certificate No:		Scale	
MTL5045 Isolating Driver, 4/20mA		Factory Mutual				N/A	
Org. No.		Sheet		Title		Title	
SCI-553		1 of 2		MTL5045 Isolating Driver, 4/20mA		MTL5045 Isolating Driver, 4/20mA	



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Title		Certifying Authority:		System Certificate No:		Scale	
MTL5045 Isolating Driver, 4/20mA		Factory Mutual				N/A	
Org. No.		Sheet		Title		Title	
SCI-553		1 of 2		MTL5045 Isolating Driver, 4/20mA		MTL5045 Isolating Driver, 4/20mA	

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 MTL5045 ie channel 1 (Terminals 1 & 2), are as follows:-</p> <p>Terminal 1 Wrt 2/3 $V_{oc} \leq 28V$ $I_{sc} \leq 93mA$</p>											
Dm		<table border="1" style="margin: 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;">$L_a \leq 33.6mH$</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	$C_a \leq 1.04\mu F$	$L_a \leq 33.6mH$
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	$C_a \leq 1.04\mu F$	$L_a \leq 33.6mH$											
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Ckd	Dm	<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 MTL5045 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 MTL5045 is installed in Division 2 Hazardous locations, a warning label must be prominently affixed near the unit(s) which warns that the MTL5045 must not be removed or inserted unless the area is known to be non-hazardous.</p>											
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Iss	Date	<p>System Certificate No:</p> <p>Certifying Authority: Factory Mutual</p> <p>Title</p> <p style="text-align: center;">MTL5045 Isolating Driver, 4/20mA</p>											
1	5-95 PS	Scale N/A		Sheet 2 of 2									
		Org. No.		SCI-553									

Iss	Date	Drn	Iss	Date	Drn	Modification	Ctd
1	9/5/71						
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System Certificate No:		Scale	N/A
Certifying Authority: Factory Mutual		Sheet	1 of 2
Title MTL5049 Two-Channel Isolating Driver 4/20mA		Drng. No.	SCI-549

Iss	1	Date	5/85	Drn		Modification		Chk	
Iss		Date		Drn		Modification		Chk	
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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 MTL5049 ie channel 1 (Terminals 1 & 2), channel 2 (Terminals 4 & 5) are as follows:-

Terminal 1 Wrt 2/3 $V_{oc} \leq 28V$ $I_{sc} \leq 93mA$
Terminal 4 Wrt 5/3 $V_{oc} \leq 28V$ $I_{sc} \leq 93mA$

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	$C_a \leq 1.04\mu F$	$L_a \leq 36.6mH$

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

Note 5
The MTL5049 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 MTL5049 is installed in Division 2 Hazardous locations, a warning label must be prominently affixed near the unit(s) which warns that the MTL5049 must not be removed or inserted unless the area is known to be non-hazardous.

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Title MTL5049 Two-Channel Isolating Driver 4/20mA	Org. No. SCI-549