HAZARDOUS AREA APPARATUS

See note 2

Alternative connection

MTL5011B

ASSOCIATED OR NON-HAZARDOUS LOCATION APPARATUS

See Note 1

Note: NO SAFETY EARTH REQUIRED

HAZARDOUS LOCATION
CL I, II, III; DIV 1; GPs A, B, C, D, E, F, G.

NON-HAZARDOUS LOCATION
OR DIVISION 2 HAZARDOUS LOCATION
CL I, DIV 2; Gps A, B, C, D

NON-HAZARDOUS LOCATION
Note 1

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

Note 2

The Hazardous Location equipment may be Simple Apparatus. 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

a) Entity Concept Parameters for each channel of the MTL5011B i.e channel 1 (Terminals 1 & 2) are as follows:-

Channel 1 - Terminal 1 Wrt 2/3  \( V_{oc} \leq 10.5V \)  \( I_{sc} \leq 14mA \)

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>( C_a \leq 2.4\mu F )</th>
<th>( L_a \leq 165mH )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>( C_a \leq 7.2\mu F )</td>
<td>( L_a \leq 495mH )</td>
</tr>
<tr>
<td>Groups D, F and G</td>
<td>( C_a \leq 19.2\mu F )</td>
<td>( L_a \leq 1000mH )</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria :-

\( V_{oc} \leq V_{max} \), \( I_{sc} \leq I_{max} \)

\( C_a \geq Cl + C_{able}, L_a \geq Li + L_{cable} \)

Note 4

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 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

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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.
System Certificate No:
MTL012 Single Channel, Switch Proximity Detector Interface

Certifying Authority:
UL

Title:
Installation Diagram

Iss: 1
Date: 2.01
Dra: SM

Modification

Ch: X

Iss: X
Date: X
Dra: X

Modification

Ch: X

HAZARDOUS AREA APPARATUS
See note 2

MTRL5012

ASSOCIATED OR NON-HAZARDOUS LOCATION APPARATUS
See Note 1

HAZARDOUS LOCATION
CL I, II, III; DIV 1; GPs A, B, C, D, E, F, G.

NON-HAZARDOUS LOCATION
OR DIVISION 2 HAZARDOUS LOCATION
CL I, DIV 2; Gps A, B, C, D

Note: NO SAFETY EARTH REQUIRED

Alternative connection

See note 3
Note 1

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

Note 2

The Hazardous Location equipment may be Simple Apparatus. 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

a) Entity Concept Parameters for the MTL5012 ie channel 1 (Terminals 1 & 2) are as follows:

Channel 1 - Terminal 1 Wt 2/3  \( V_{oc} \leq 10.5V \)  \( I_{sc} \leq 14mA \)

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>( C_a \leq 2.4 \mu F )</th>
<th>( L_a \leq 165mH )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>( C_a \leq 7.2 \mu F )</td>
<td>( L_a \leq 495mH )</td>
</tr>
<tr>
<td>Groups D, F and G</td>
<td>( C_a \leq 19.2 \mu F )</td>
<td>( L_a \leq 1000mH )</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria:

\( V_{oc} \leq V_{max}, \ I_{sc} \leq I_{max} \)

\( C_a \geq C_i + C_{cable}, \ L_a \geq L_i + L_{cable} \)

Note 4

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5

The MTL5012 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

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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 1

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

Note 2

The Hazardous Location equipment may be Simple Apparatus. Other apparatus such as RTDs, 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

a) Entity Concept Parameters for each channel of the MTL5014 ie channel 1 (Terminals 1 & 2) are as follows:-

Channel 1 - Terminal 1 Wt 2/3  
Voc ≤ 10.5V  
Isc ≤ 14mA

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>Ca ≤ 2.4 μF</th>
<th>La ≤ 165mH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>Ca ≤ 7.2 μF</td>
<td>La ≤ 465mH</td>
</tr>
<tr>
<td>Groups D, F and G</td>
<td>Ca ≤ 19.2 μF</td>
<td>La ≤ 1000mH</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria:

\[
\begin{align*}
Voc & \leq V_{\text{max}}, & Isc & \leq I_{\text{max}} \\
Ca & \geq Cl + C_{\text{cable}}, & La & \geq Li + L_{\text{cable}}
\end{align*}
\]

Note 4

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5

The MTL5014 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

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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 1

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

Note 2

The Hazardous Location equipment may be Simple Apparatus. Other apparatus such as RTDs, 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

a) Entity Concept Parameters for each channel of the MTL5015 ie channel 1 (Terminals 1 & 2), channel 2 (Terminals 4 & 5) are as follows:-

Channel 1 - Terminal 1 Wrt 2/3 Voc ≤ 10.5V Isc ≤ 14mA
Channel 2 - Terminal 4 Wrt 5/3 Voc ≤ 10.5V Isc ≤ 14mA

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>Ca ≤ 2.4 μF</th>
<th>La ≤ 165mH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>Ca ≤ 7.2 μF</td>
<td>La ≤ 465mH</td>
</tr>
<tr>
<td>Groups D,F and G</td>
<td>Ca ≤ 19.2 μF</td>
<td>La ≤ 1000mH</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria :-

\[ \text{Voc} \leq V_{\text{max}}, \quad \text{Isc} \leq I_{\text{max}} \]
\[ C_a \geq C + C_{\text{cable}}, \quad L_a \geq L + L_{\text{cable}} \]

Note 4

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5

The MTL5015 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

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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.

System Certificate No:  
Certifying Authority: UL  
Title: MTL5015 Two Channel, Switch/Proximity Detector Interface Installation Diagram  
Scale: N/A  
Sheet: 2 of 2  
Drg. No: SCI-899
Note 1.

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

Note 2.

The Hazardous Location equipment may be Simple Apparatus. 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.

a) Entity Concept Parameters for each channel of the MTL5017 ie channel 1 (Terminals 1 & 2), channel 2 (Terminals 4 & 5) are as follows:-

Channel 1 - Terminal 1 Wt 2/3 Voc ≤ 10.5V Isc ≤ 14mA
Channel 2 - Terminal 4 Wt 5/3 Voc ≤ 10.5V Isc ≤ 14mA

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>Ca ≤ 2.4 μF</th>
<th>La ≤ 165mH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>Ca ≤ 7.2 μF</td>
<td>La ≤ 495mH</td>
</tr>
<tr>
<td>Groups D, F and G</td>
<td>Ca ≤ 19.2 μF</td>
<td>La ≤ 1320mH</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria :-

\[ \text{Voc} \leq \text{Vmax}, \quad \text{Isc} \leq \text{Imax} \]
\[ \text{Ca} \geq \text{Cl} + \text{Cable}, \quad \text{La} \geq \text{Li} + \text{Lcable} \]

Note 4.

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5.

The MTL5017 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

Note 6.

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7.

Use UL listed 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 1
The Non-Hazardous (Safe) Location (or Control Room) equipment must not generate or use more than 250 volts r.m.s or d.c.

Note 2
The Hazardous Location equipment may be Simple Apparatus. 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
a) Entity Concept Parameters for each channel of the MTL5018 ie channel 1 (Terminals 1 & 2), channel 2 (Terminals 4 & 5) are as follows:-

Channel 1 - Terminal 1 Wt 2/3 Voc ≤ 10.5V Isc ≤ 14mA
Channel 2 - Terminal 4 Wt 5/6 Voc ≤ 10.5V Isc ≤ 14mA

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>Ca ≤ 2.4 μF</th>
<th>La ≤ 165mH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>Ca ≤ 7.2 μF</td>
<td>La ≤ 495mH</td>
</tr>
<tr>
<td>Groups D, F and G</td>
<td>Ca ≤ 19.2 μF</td>
<td>La ≤ 1000mH</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria :-
Voc ≤ Vmax, Isc ≤ Imax
Ca ≥ Ci + Ccable, la ≥ Li + Lcable

Note 4
For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5
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:-
Non-Hazardous Locations
Class I, Division 2, Groups A, B, C and D, Hazardous Locations

Note 6
Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7
Use UL listed 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 1

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

Note 2

The Hazardous Location equipment may be Simple Apparatus. Other apparatus such as RTDs, 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

a) Entity Concept Parameters for the MTL5021 ie channel 1 (Terminals 1 & 2) are as follows:-

Channel 1 - Terminal 1 Wt 2/3 Voc ≤ 25V Isc ≤ 147mA

<table>
<thead>
<tr>
<th>Groups</th>
<th>Ca (μF)</th>
<th>La (mH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A and B</td>
<td>≤ 0.17</td>
<td>≤ 1.32</td>
</tr>
<tr>
<td>C and E</td>
<td>≤ 0.51</td>
<td>≤ 3.96</td>
</tr>
<tr>
<td>D, F and G</td>
<td>≤ 1.36</td>
<td>≤ 10.56</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria :-

Voc ≤ Vmax, Isc ≤ Imax
Ca ≥ Ci + Cable, La ≥ Li + Lable

Note 4

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5

The MTL5021 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

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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 1.

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

Note 2.

The Hazardous Location equipment may be Simple Apparatus. 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.

a) Entity Concept Parameters for the MTL5022 ie channel 1 (Terminals 1 & 2) are as follows:

Channel 1 - Terminal 1 Wt 2/3  \( V_{oc} \leq 25 V \)  \( I_{sc} \leq 188mA \)

<table>
<thead>
<tr>
<th>Groups C and E</th>
<th>( C_a \leq 0.51 \mu F )</th>
<th>( L_a \leq 3.98mH )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups D, F and G</td>
<td>( C_a \leq 1.36 \mu F )</td>
<td>( L_a \leq 10.58mH )</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria:

\[ V_{oc} \leq V_{\text{max}}, \quad I_{sc} \leq I_{\text{max}} \]

\[ C_a \geq C_{i + C_{\text{cable}}}, \quad L_a \geq L_{i + L_{\text{cable}}} \]

Note 4.

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5.

The MTL5022 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

Note 6.

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7.

Use UL listed 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 1.

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

Note 2.

The Hazardous Location equipment may be Simple Apparatus. 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.

a) Entity Concept Parameters for the MTL5023 ie channel 1 (Terminals 1 & 2) are as follows:

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>Ca ≤ 0.17 μF</th>
<th>La ≤ 1.32 mH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>Ca ≤ 0.51 μF</td>
<td>La ≤ 3.96 mH</td>
</tr>
<tr>
<td>Groups D, F and G</td>
<td>Ca ≤ 1.36 μF</td>
<td>La ≤ 10.58 mH</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria:

\[ \text{Voc} \leq \text{Vmax}, \quad \text{Isc} \leq \text{Imax} \]
\[ \text{Ca} \geq \text{C} + \text{Cable}, \quad \text{La} \geq \text{L} + \text{Cable} \]

Note 4.

For installation in the USA, the installation practices must comply with the National Electrical Code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5.

The MTL5023 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

Note 6.

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7.

Use UL listed 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.

System Certificate No: Scale N/A
Certifying Authority: UL Sheet 2 of 2
Title MTL5023 Solenoid / Alarm Driver Installation Diagram
Drg. No. SCI-905
Note 1.

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

Note 2.

The Hazardous Location equipment may be Simple Apparatus. Other apparatus such as RTDs, 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.

a) Entity Concept Parameters for the MTL5024 ie channel 1 (Terminals 1 & 2) are as follows:-

Channel 1 - Terminal 1 Wrt 2/3 Voc ≤ 25V  Isc ≤ 147mA

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>Ca ≤ 0.17 μF</th>
<th>La ≤ 1.32mH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>Ca ≤ 0.51 μF</td>
<td>La ≤ 3.93mH</td>
</tr>
<tr>
<td>Groups D,F and G</td>
<td>Ca ≤ 1.36 μF</td>
<td>La ≤ 10.58mH</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria :-

Voc ≤ Vmax,  Isc ≤ Imax
Ca ≥ C1 + Ccable,  La ≥ Li + Lcable

Note 4.

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5.

The MTL5024 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

Note 6.

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7.

Use UL listed 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.

System Certificate No: N/A
Certifying Authority: UL
Title: MTL5024 Solenoid / Alarm Driver, Installation Diagram
Drg. No: SCI-906
HAZARDOUS AREA APPARATUS

See note 2

See note 3

Alternative connection

Terminal not connected

MTL5025

ASSOCIATED OR NON-HAZARDOUS LOCATION APPARATUS

See Note 1

Note: NO SAFETY EARTH REQUIRED

HAZARDOUS LOCATION
CL I, II, III; DIV 1: Gps A, B, C, D, E, F, G.

NON-HAZARDOUS LOCATION OR DIVISION 2 HAZARDOUS LOCATION
CL I, DIV 2: Gps A,B,C,D

NON-HAZARDOUS LOCATION

MTL5025 Solenoid / Alarm Driver.
Note 1

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

Note 2

The Hazardous Location equipment may be Simple Apparatus. 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

a) Entity Concept Parameters for the MTL5025 ie channel 1 (Terminals 1 & 2) are as follows:

Channel 1 - Terminal 1 Wt 2/3 \( V_{oc} \leq 25V \), \( I_{sc} \leq 93mA \)

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>( C_a \leq 0.17 \mu F )</th>
<th>( L_a \leq 4.2 \mu H )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>( C_a \leq 0.51 \mu F )</td>
<td>( L_a \leq 12.6 \mu H )</td>
</tr>
<tr>
<td>Groups D,F and G</td>
<td>( C_a \leq 1.36 \mu F )</td>
<td>( L_a \leq 33.6 \mu H )</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria:

\[ V_{oc} \leq V_{max}, \quad I_{sc} \leq I_{max} \]

\[ C_a \geq C_l + C_{cable}, \quad L_a \geq L_l + L_{cable} \]

Note 4

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

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

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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 1

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

Note 2

The Hazardous Location equipment may be Simple Apparatus. Other apparatus such as RTDs, 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

a) Entity Concept Parameters for the MTL5031 ie channel 1 (Terminals 1 & 2/3) are as follows:-

Channel 1 - Terminal 1 Wt 2/3  \( V_{oc} \leq 26.6V \)  \( I_{sc} \leq 94mA \)

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>( C \leq 0.13 \mu F )</th>
<th>( L \geq 4.2mH )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>( C \leq 0.39 \mu F )</td>
<td>( L \geq 12.6mH )</td>
</tr>
<tr>
<td>Groups D,F and G</td>
<td>( C \leq 1.04 \mu F )</td>
<td>( L \geq 33.6mH )</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria :-

\( V_{oc} \leq V_{max} \),  \( I_{sc} \leq I_{max} \)

\( C_{i} \geq C_{i} + C_{cable} \),  \( L_{i} \geq L_{i} + L_{cable} \)

Note 4

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5

The MTL5031 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

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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 1

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

Note 2

The Hazardous Location equipment may be Simple Apparatus. Other apparatus such as RTD's, LED's and non-inductive resistors may also be used if the autogeneration 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 the MTL5032
(Terminals 2 to 1), (Terminals 4 & 3 to 1), (Terminals 5 & 4 to 1) and (Terminals 3 to 1) are as follows:-

a) Terminals 2 to 1 \( V_{oc} \leq 10.5V \) \( I_{sc} \leq 14mA \)

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>( C_a \leq 2.4 \mu F )</th>
<th>( L_a \leq 165mH )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>( C_a \leq 7.2 \mu F )</td>
<td>( L_a \leq 465mH )</td>
</tr>
<tr>
<td>Groups D, F and G</td>
<td>( C_a \leq 19.2 \mu F )</td>
<td>( L_a \leq 1320mH )</td>
</tr>
</tbody>
</table>

b) Terminals 4 & 3 to 1 \( V_{it} \leq 28V \) \( I_{lt} \leq 146mA \)

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>( C_a \leq 0.13 \mu F )</th>
<th>( L_a \leq 1.54mH )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>( C_a \leq 0.39 \mu F )</td>
<td>( L_a \leq 4.71mH )</td>
</tr>
<tr>
<td>Groups D, F and G</td>
<td>( C_a \leq 1.04 \mu F )</td>
<td>( L_a \leq 12.56mH )</td>
</tr>
</tbody>
</table>

c) Terminals 5 & 4 to 1 \( V_{it} \leq 28V \) \( I_{lt} \leq 93mA \)

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>( C_a \leq 0.13 \mu F )</th>
<th>( L_a \leq 4.1mH )</th>
</tr>
</thead>
<tbody>
<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 33.6mH )</td>
</tr>
</tbody>
</table>

d) Terminals 3 to 1 \( V_{oc} \leq 1.1V \) \( I_{sc} \leq 51mA \)

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>( C_a \leq 1000 \mu F )</th>
<th>( L_a \leq 13.8mH )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>( C_a \leq 1000 \mu F )</td>
<td>( L_a \leq 41.4mH )</td>
</tr>
<tr>
<td>Groups D, F and G</td>
<td>( C_a \leq 1000 \mu F )</td>
<td>( L_a \leq 110mH )</td>
</tr>
</tbody>
</table>

e) The parameters of the complete installation must meet the following criteria:-

\[ V_{oc} \leq V_{max}, \  I_{sc} \leq I_{max} \]
\[ C_a = C + C_{cable}, \ L_a \geq L + L_{cable} \]
Note 4

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5

The MTL5032 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

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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 1

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

Note 2

The Hazardous Location equipment may be Simple Apparatus. 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

a) Entity Concept Parameters for each channel of the MTL5040 ie channel 1 (Terminals 1 & 2), channel 2 (Terminals 4 & 5) are as follows:-

Channel 1 - Terminal 1 Wt 2  V oc ≤ 28 V  Isc ≤ 93 mA
Channel 2 - Terminal 4 Wt 5  V oc ≤ 28 V  Isc ≤ 93 mA

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>Ca ≤ 0.13 μF</th>
<th>La ≤ 4.2mH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>Ca ≤ 0.39 μF</td>
<td>La ≤ 12.6mH</td>
</tr>
<tr>
<td>Groups D,F and G</td>
<td>Ca ≤ 1.04 μF</td>
<td>La ≤ 33.6mH</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria :-

V oc ≤ V max,  Isc ≤ I max
Ca ≥ Cl + Csable,  La ≥ Li + Lcable

Note 4

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5

The MTL5040 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

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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 1

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

Note 2

The Hazardous Location equipment may be Simple Apparatus. 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

a) Entity Concept Parameters for the MTL5041 ie channel 1 (Terminals 1 & 2) are as follows:

Channel 1 - Terminal 1 Vt 2

Voc ≤ 28V  Isc ≤ 93mA

| Groups A and B | Ca ≤ 0.13 µF | La ≤ 4.2 mH |
| Groups C and E | Ca ≤ 0.39 µF | La ≤ 12.6 mH |
| Groups D, F and G | Ca ≤ 1.04 µF | La ≤ 33.6 mH |

b) The parameters of the complete installation must meet the following criteria:

Voc ≤ Vmax,  Isc ≤ Imax

Ca ≥ Ci + Ccable,  La ≥ Li + Lcable

Note 4

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.6.

Note 5

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:

Non-Hazardous Locations
Class I, Division 2, Groups A, B, C and D, Hazardous Locations

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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.

System Certificate No: N/A

Certifying Authority: UL

Title: MTL5041 Repeater Power Supply Installation Diagram

Sheet 2 of 2

Drg. No. SCI-911
The Non-Hazardous (Safe) Location (or Control Room) equipment must not generate or use more than 250 volts r.m.s. or d.c.

The Hazardous Location equipment may be Simple Apparatus. 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

a) Entity Concept Parameters for each channel of the MTL5042 ie channel 1 (Terminals 1 & 2) are as follows:-

Channel 1 - Terminal 1 Wt 2  V oc ≤ 28V  I sc ≤ 93mA

<table>
<thead>
<tr>
<th>Groups</th>
<th>Ca ≤</th>
<th>La ≤</th>
</tr>
</thead>
<tbody>
<tr>
<td>A and B</td>
<td>0.13μF</td>
<td>4.2mH</td>
</tr>
<tr>
<td>C and E</td>
<td>0.39μF</td>
<td>12.6mH</td>
</tr>
<tr>
<td>D, F and G</td>
<td>1.04μF</td>
<td>33.6mH</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria:

\[ V_{oc} \leq V_{max}, \quad I_{sc} \leq I_{max} \]

\[ C_a \geq C_{i} + C_{cable}, \quad L_{a} \geq L_{i} + L_{cable} \]

Note 4

For installation in the USA, the installation practices must comply with the National Electrical Code NFPA70 Article 504 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

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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

The HHG is a MTL611B Hand Held Communicator and Interface. The MTL611B and Interface may also be used in the Non-Hazardous or Division 2 Hazardous Locations.

System Certificate No: N/A
Certifying Authority: UL
Title: MTL5042 Repeater Power Supply Installation Diagram
Sheet 2 of 2
Drg. No. SCI-912
HAZARDOUS AREA APPARATUS

See note 2

Terminal not used

Terminal not connected

See note 3

MTL5043

ASSOCIATED OR NON-HAZARDOUS LOCATION APPARATUS

See Note 1

Note: NO SAFETY EARTH REQUIRED

HAZARDOUS LOCATION

CL I, II, III; DIV 1; GPs A, B, C, D, E, F, G.

NON-HAZARDOUS LOCATION

CL I, DIV 2; Gps A, B, C, D
Note 1

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

Note 2

The Hazardous Location equipment may be Simple Apparatus. 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

a) Entity Concept Parameters for the MTL5043 ie channel 1 (Terminals 1 & 2) are as follows:-

Channel 1 - Terminal 1 W1t 2/3  \( V_{oc} \leq 28V \)  \( I_{sc} \leq 93mA \)

<table>
<thead>
<tr>
<th>Groups A and B</th>
<th>( C_{a} \leq 0.14 \mu F )</th>
<th>( L_{a} \leq 4.3mH )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups C and E</td>
<td>( C_{a} \leq 0.43 \mu F )</td>
<td>( L_{a} \leq 17.3mH )</td>
</tr>
<tr>
<td>Groups D,F and G</td>
<td>( C_{a} \leq 1.14\mu F )</td>
<td>( L_{a} \leq 34.2mH )</td>
</tr>
</tbody>
</table>

b) The parameters of the complete installation must meet the following criteria :-

\( V_{oc} \leq V_{max} \),  \( I_{sc} \leq I_{max} \)

\( C_{a} \geq C_{t} + C_{cable} \),  \( L_{a} \geq L_{i} + L_{cable} \)

Note 4

For installation in the USA, the installation practices must comply with the National Electrical code NFPA70 Article 504 ANSI/ISA RP12.5.

Note 5

The MTL5043 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

Note 6

Intrinsically Safe wiring must be installed in accordance with the ANSI National Electrical Code / NFPA70, Article 504 in an enclosure meeting the requirements of ANSI/ISA-S82.

Note 7

Use UL listed 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.