LCT
Operator's Guide

USB Loop Configuration Tool
for ExTemp Infrared Temperature Sensor
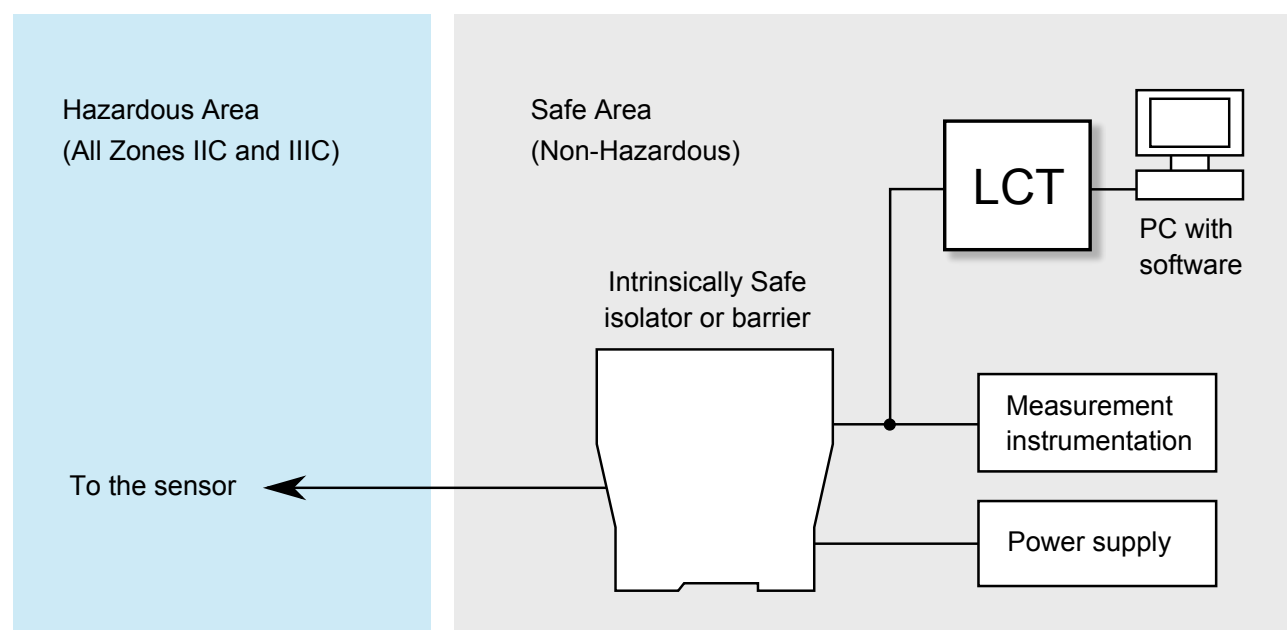
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Introduction

The Loop Configuration Tool model LCT is a configuration adapter for ExTemp infrared temperature sensors.

It is designed to be connected to the 4-20 mA current loop on the safe side of an Intrinsically Safe barrier or isolator, and to a Windows PC via USB.
This manual describes how to connect the LCT and use it to configure the sensor. For information on connecting and using the sensor itself, please refer to the sensor manual.

Electrical Connection

Connect the device to the 4-20 mA measurement loop via the hook-type connectors. For reliable communications, the total resistance R_L on the 4-20 mA loop should be within the range specified on the connection diagrams. You may need to connect a resistor in series with the existing measurement instrumentation on the 4-20 mA loop to ensure this.

Hazardous Area
(All Zones IIC and IIIC)

Safe Area
(Non-Hazardous)

LCT

PC with software

Intrinsically Safe isolator or barrier

Measurement instrumentation

To the sensor

Power supply

Example Isolator: model MTL5541

This isolator has an internal resistance of 220Ω. Two wiring configurations are possible, depending on whether or not this internal resistance is used.

Configuration A: $400 \, \Omega \leq R_L \leq 800 \, \Omega$ (not using the internal resistance)
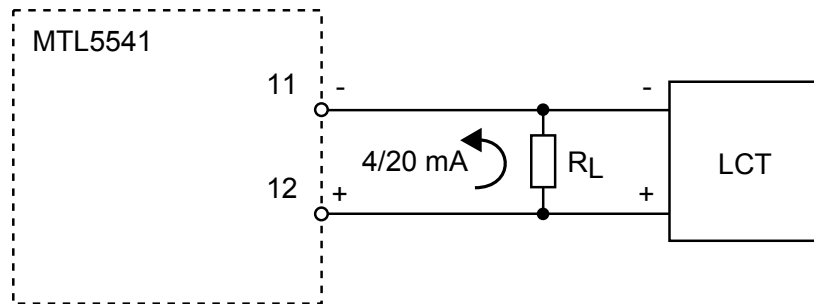
Configuration B: $180 \, \Omega \leq R_L \leq 580 \, \Omega$ (using the internal resistance)
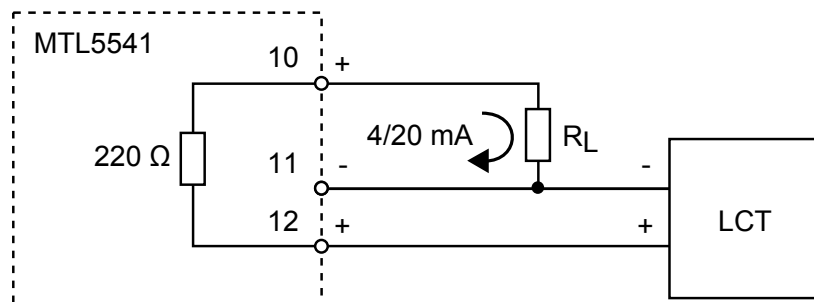
Example Barrier: MTL7706+ $200 \, \Omega \leq R_L \leq 800 \, \Omega$

Software Installation

Software is included on a mini CD. Install the software before connecting the USB adapter to the PC. This will ensure the driver is properly installed.

The latest version of the software is available for download from the Calex website.

Using the Software

See the software interface diagram overleaf.

If the Settings icon is greyed out, the software is locked. Unlock the software to allow access to the Settings menu.

Electrical Interference

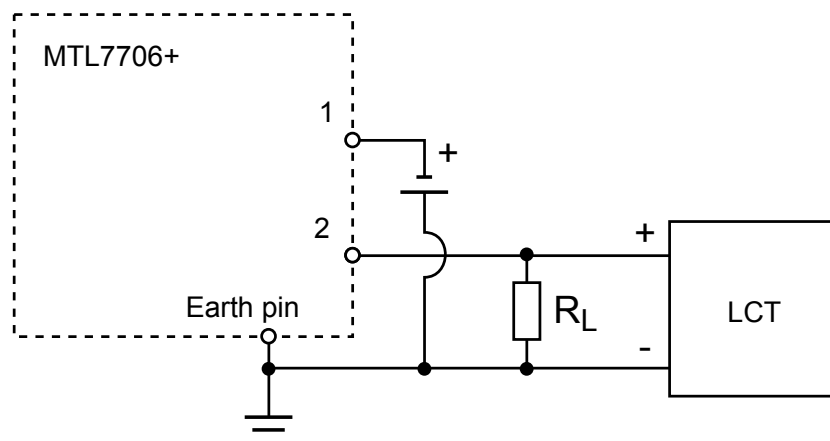To minimise electromagnetic interference or 'noise', the sensor and configuration tool should be mounted away from motors, generators and such like.

Maintenance and Troubleshooting

Our technical support engineers are available for application assistance, calibration, repair, and solutions to specific problems. Contact our Service Department before returning any equipment. In many cases, problems can be solved over the telephone. Contact us for further advice.

Guarantee

Calex guarantees each instrument it manufactures to be free from defect in material and workmanship under normal use and service for the period of two years from the date of purchase. This guarantee extends only to the original buyer according to the Calex Terms and Conditions of Sale.

OneTemp°
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Configuration Software

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CalexConfig

v1.01   Searching for sensors...

Connection List

COM4
ExTemp

Select connected sensor

Temperature Display

27/01/2015 14:32:37

19.3°C

Temperature List

27/01/2015 14:33:50

Filtered Temp:	72.5 °C
Unfiltered Temp:	73.1 °C
Average Temp:	72.5 °C
Maximum Temp:	79.3 °C
Minimum Temp:	70.9 °C
Sensor Temp:	40.9 °C
Reflected Temp:	40.9 °C

Unlock

Unlock   27/01/2015 14:34:01

Enter password: ****

Default Password: 1234

Exit

Unlock

Change Password

Change Password   27/01/2015 14:34:17

Enter new password: ****

Confirm new password: ****

Apply (save and exit)

Settings

Settings   27/01/2015 14:34:23

mA   f(x)   ε
4 to 20 mA   Output   Emissivity &
Output   Processing   Compensation

Graph

27/01/2015 14:35:05

Temperature (°C)

80
60
40
20
0

14:34:00   14:34:20   14:34:40   14:35:00
Time (hh:mm:ss)

Clear graph

4 to 20 mA Output

mA   4 to 20mA Output   27/01/2015 14:34:25

Temperature @ 4mA: 0.0 °C

Temperature @ 20mA: 500.0 °C

Minimum temperature limit: -20.0°C
Maximum temperature limit: 1000.0°C
Minimum temperature span: 100.0°C

Processing

f(x) Processing   27/01/2015 14:34:30

Average Period: 0.0 s

Hold Mode:
Off ○   Peak ○   Valley ○

Hold Period: 0.0 s

Emissivity & Compensation

ε   Emissivity &   27/01/2015 14:34:37
    Compensation

Emissivity: 0.995

Enable Reflected
Energy Compensation: ▣

Reflected
Temperature: 40.9 °C