



DAMS Configuration Tool

User Guide

Commercial in Confidence

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Revision history

Date	Rev	By	DCN	Comments	CHKD	CHKD Date	Ext. APPD	Ext. APPD Ref	Ext. APPD Date
27/08/2021	00	PJO	N/A	Original Issue	NS	02/09/2021	-	-	-
-	-	-	-	-	-	-	-	-	-
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Warnings, cautions and notes

Warnings and Cautions are used in this manual to highlight potential hazards and safety risks. Notes are used to provide supplementary information that is not hazard-related.



WARNING: THIS INDICATES A POTENTIALLY HAZARDOUS SITUATION THAT, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.



CAUTION: THIS INDICATES A POTENTIALLY HAZARDOUS SITUATION THAT, IF NOT AVOIDED, COULD RESULT IN EQUIPMENT DAMAGE OR LOSS OF DATA.



NOTE: THIS INDICATES INFORMATION THAT IS CONSIDERED IMPORTANT BUT IS NOT HAZARD RELATED.

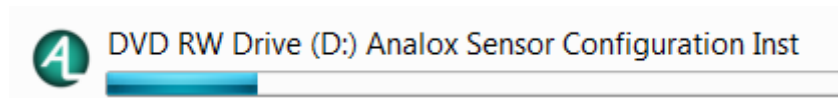
1 Introduction

The configuration tool is design built software that is used to calibrate all pumped and ambient detectors. It should be used in conjunction with the Sensor Calibration Tool Loom.

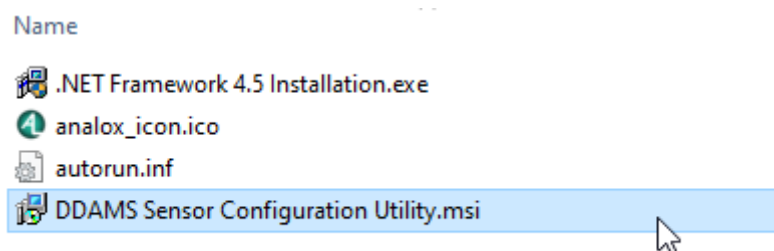
The software is supplied for installation on a CD, along with a copy of the User Guide for reference.

2 Installing the software

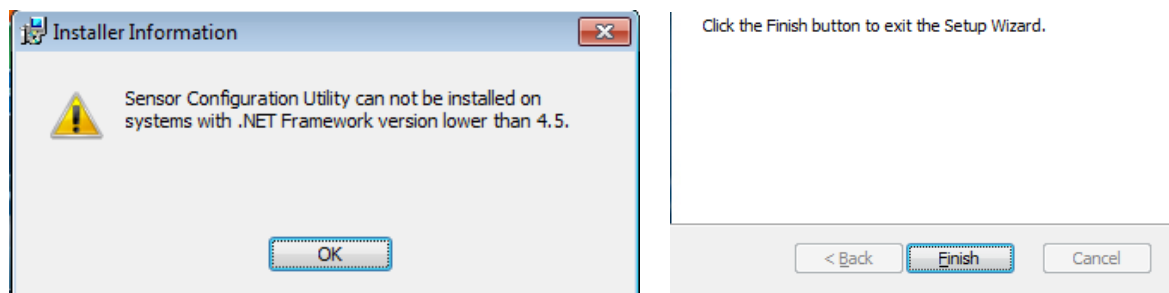
- 1] Insert the CD into the CD drive, this will load the CD onto the drive.



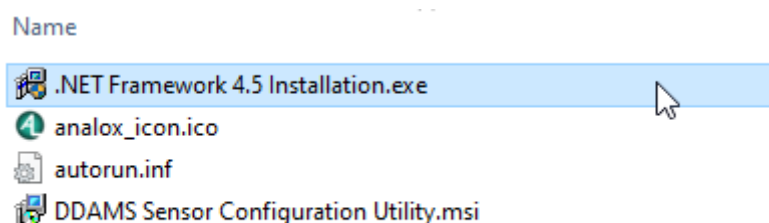
- 2] Open the CD location and open the Setup files folder, then run the DDAMS Sensor Configuration Utility.msi file.



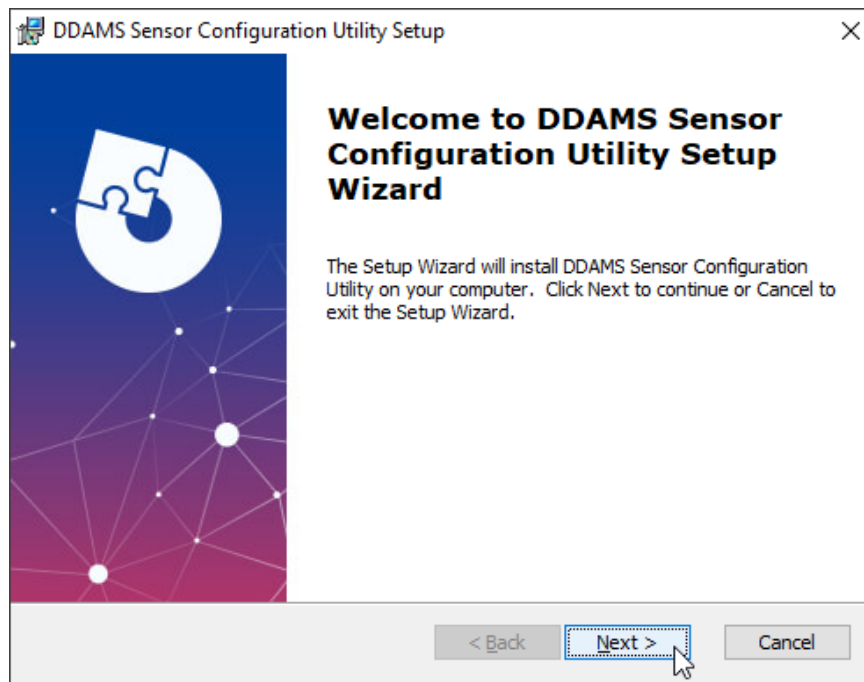
- 3] If the following message shows then installation will finish and the .NET Framework will require to be installed, click OK and then click Finish to exit the Setup Wizard.



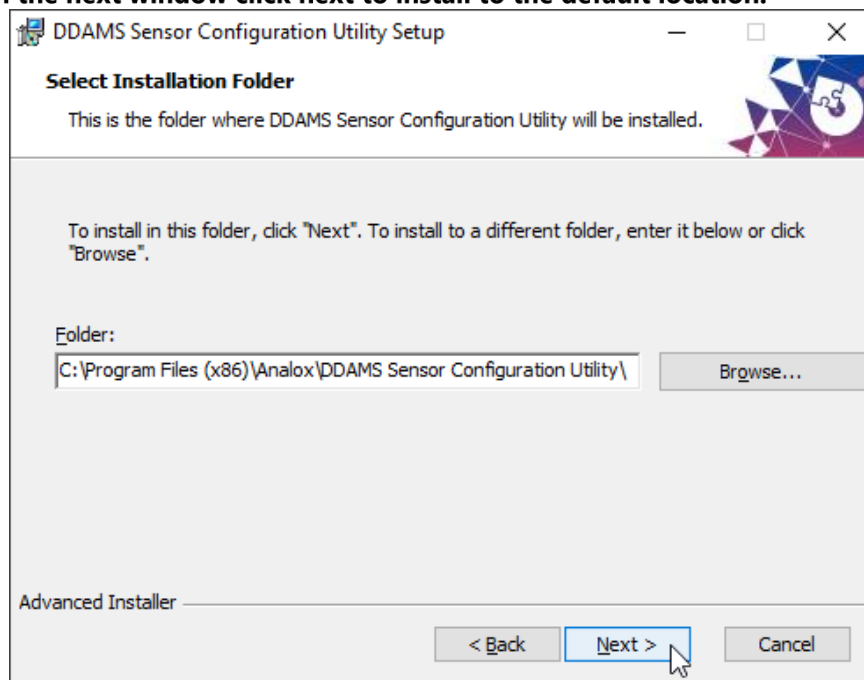
- 4] To install the .NET Framework run the file .NET Framework 4.5 Installation.exe from the software CD, accepting any installation messages.



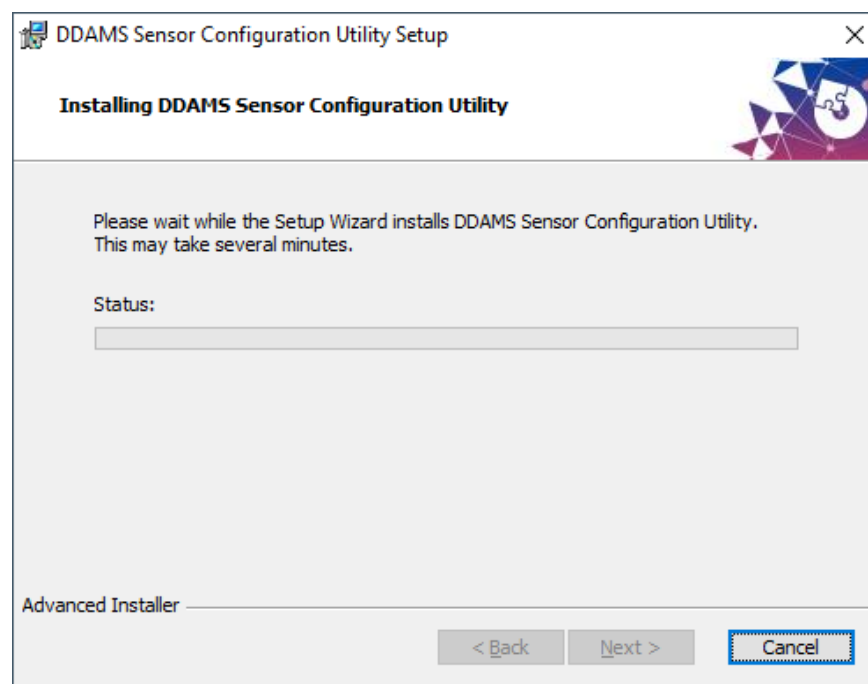
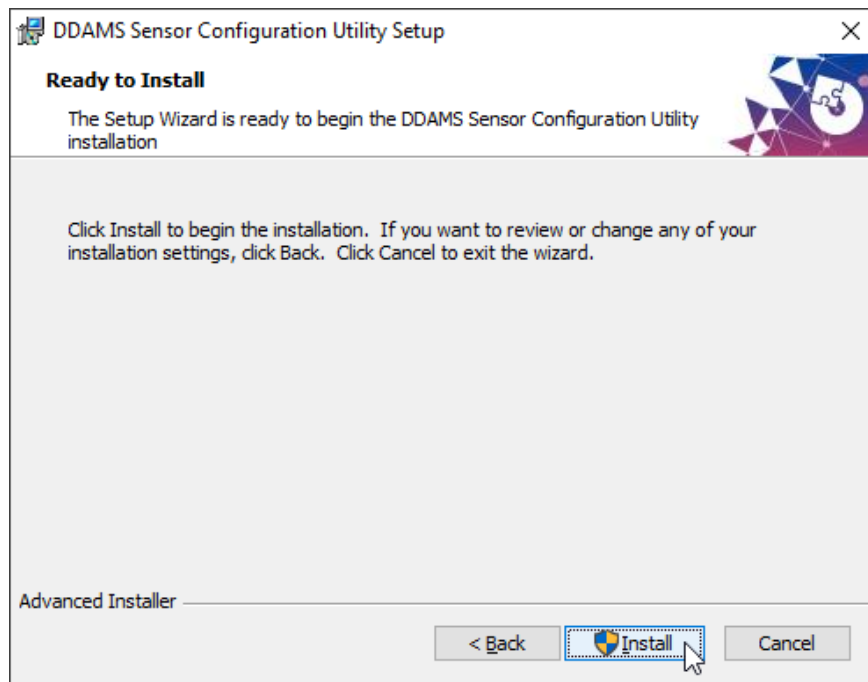
- 5] Once the .NET Framework has been installed, rerun the Sensor Configuration Utility.msi file, then on the welcome screen, click Next.



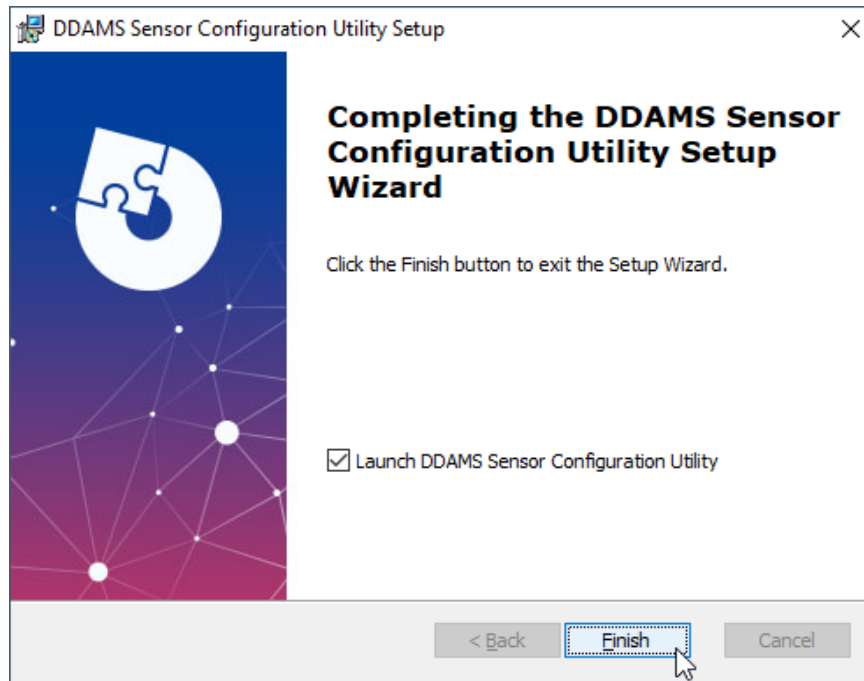
- 6] In the next window click next to install to the default location.



7] In the next window click Install, the software will start to install.



- 8] In the next window keep 'Launch Sensor Configuration Utility' checked and click Finish, this will open up the software.

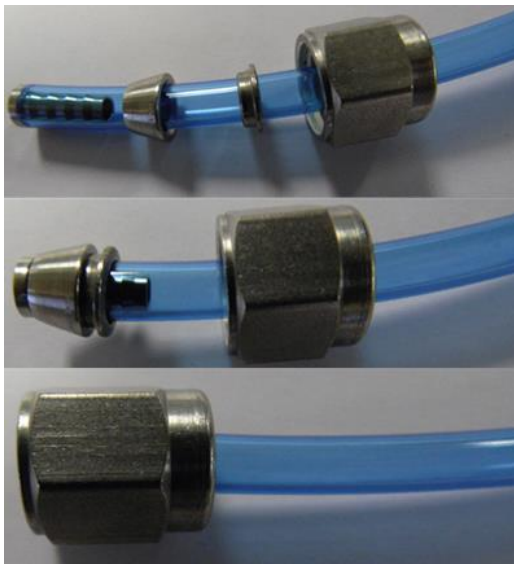


3 Setting Up the gas bottle

- 1] Connect the regulator to the gas bottle.



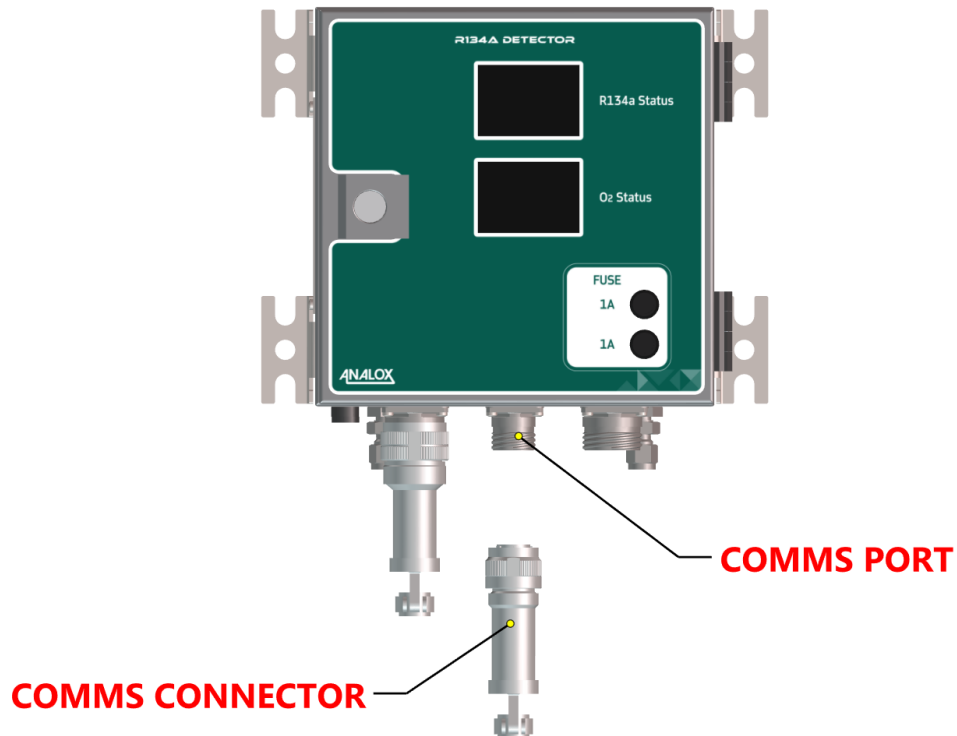
- 2] Fit a suitable 6mm compression nut and ferrule (Preferably Swagelok SS-6M0-NFSET) and a tube insert (Preferably Swagelok SS-6M5-4M) to the regulator tubing as shown to allow for connection to the remote sensor module inlet.



4 Setting Up the sensor configuration utility tool

4.1 Connecting the comms cable

- 1] Unscrew the comms connector and remove from the unit



- 2] Connect the sensor calibration tool loom lead into the comms port.

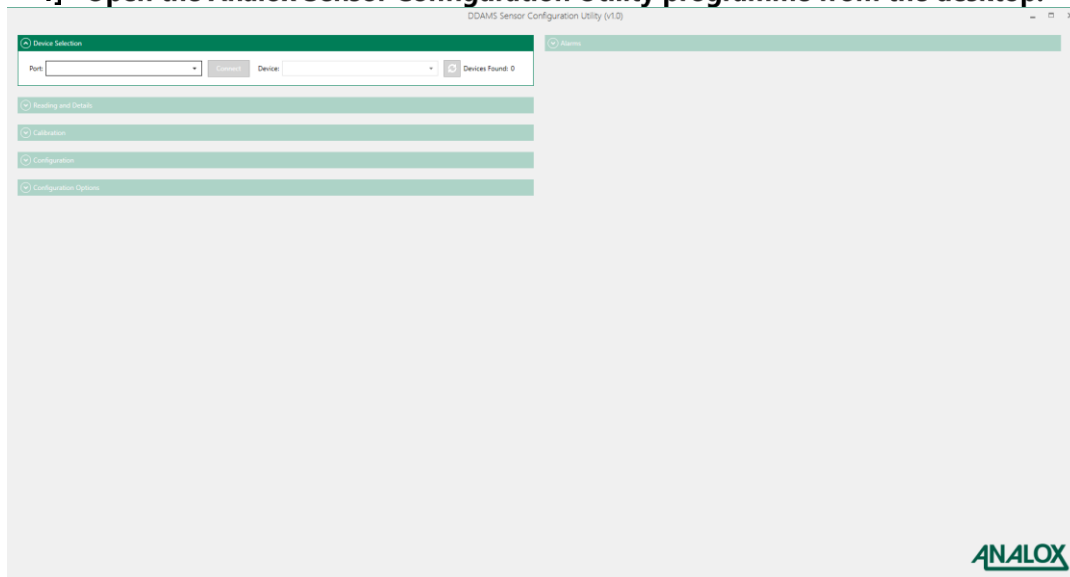


Figure 1 Calibration tool loom

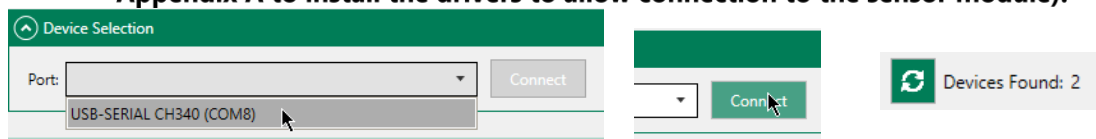
- 3] Connect the USB into a USB port on the laptop.

4.2 Starting the sensor configuration utility software

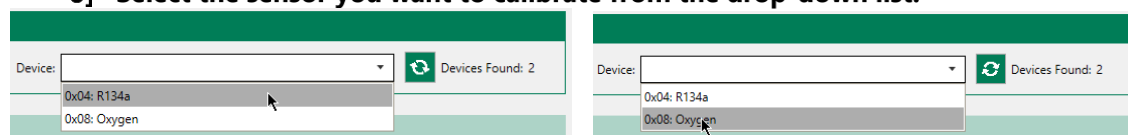
4] Open the Analox Sensor Configuration Utility programme from the desktop.



5] Select the USB port from the drop-down list and click Connect to find devices (If the required USB port is not available from the dropdown see section Appendix A Appendix A to install the drivers to allow connection to the sensor module).



6] Select the sensor you want to calibrate from the drop-down list.



The device details will show for each sensor as per the figure below depending on which sensor is selected, the device details show the current device reading, status, gas type, serial number and firmware version.

Reading and Details				
Reading: 0.000 ppm	Pressure: 1007.10 mBar	Status: Ok	Measurand: R134a	Firmware Version: 1.0.9 (Oct 13 2017)
Reading and Details				
Reading: 20.688 kPa	Pressure: 1006.67 mBar	Status: Ok	Measurand: Oxygen	Firmware Version: 1.0.9 (Oct 13 2017)

5

Calibration



NOTE:

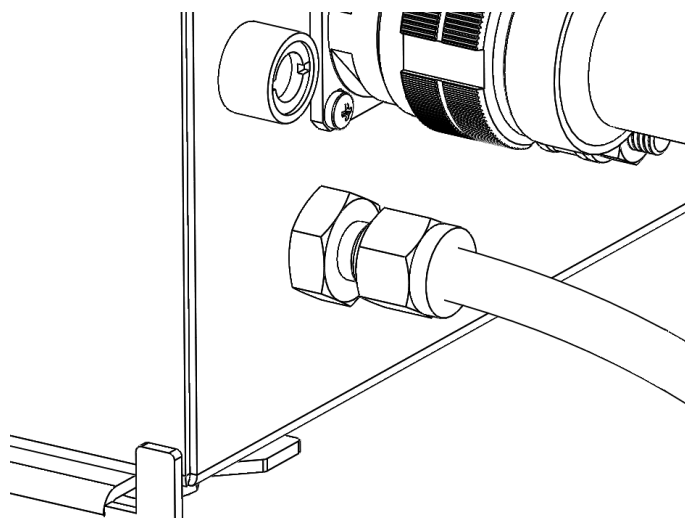
FOR INCREASED ACCURACY CALIBRATE AT OPERATING TEMPERATURE.

5.1

Calibration setup

The configuration tool is supplied pre-configured therefore under normal circumstances there will be no need to alter the alarm parameters. However, if the user requires to change alarm values, alarm direction, alarm names etc. these can be changed within the tool.

- 1] **Connect the calibration gas bottle to the gas inlet port of the remote sensor module.**



- 2] **Once the gas bottle has been connected to the gas inlet port and the sensor to be calibrated has been selected open the regulator to start the gas flow.**



NOTE:

THE DEVICE'S CALIBRATION DIALOGUE BOX WILL BE PRE-CONFIGURED.



NOTE:

IF A DIFFERENT CALIBRATION GAS IS BEING USED TO THAT SPECIFIED IN THE REMOTE SENSOR TECHNICAL MANUAL, THE GAS VALUE CAN BE CHANGED TO SUIT THE AVAILABLE CALIBRATION GAS.



NOTE:

THE ZERO & SPAN CALIBRATION GAS VALUE CAN BE ENTERED MANUALLY TO THE REQUIRED VALUE TO MATCH THE CHOSEN CALIBRATION GAS BOTTLE.

5.2 Zero calibration



NOTE: THE FOLLOWING STEPS ARE THE SAME FOR ALL SENSORS WITHIN THE REMOTE SENSOR MODULE, BUT THE GAS UNITS MAY CHANGE.



NOTE: THE ZERO CALIBRATION VALUE CANNOT BE CHANGED BY THE USER, THIS IS FIXED AND CAN NOT BE CONFIGURED.



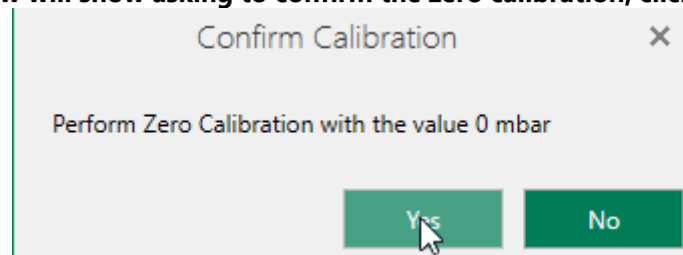
NOTE: THE R134A SENSOR DOES NOT SHOW A CALIBRATION SUCCEEDED MESSAGE, IT SHOWS A CALIBRATION REQUEST SENT MESSAGE.

- 1] Once the sensor reading has stabilised at '0' in the device details section, click on the Calibrate button to the right of the Zero Calibration 'Value' box.

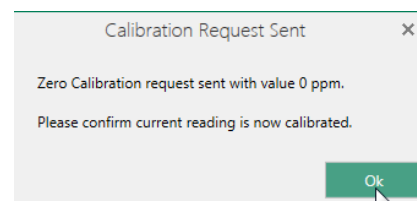
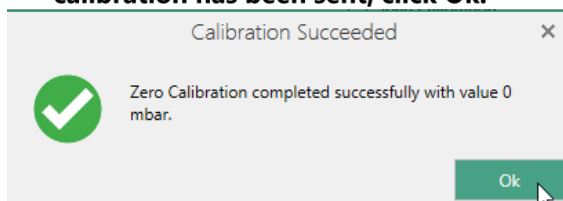
Zero Calibration

Value: 0 mbar Calibrate

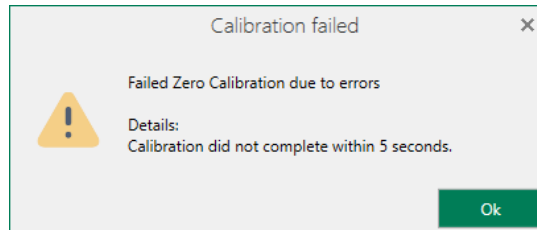
- 2] A window will show asking to confirm the zero calibration, click Yes.



- 3] For O₂ and CO₂ sensors, another window will show stating the zero calibration is successful, click Ok. For R134a sensors, another window will show stating that the calibration has been sent, click Ok.



- 4] If the zero calibration fails, a window will show stating 'Calibration Failed' with details on why it has failed.



5.3 Span calibration

Span calibration is performed in the same way as the Zero Calibration, and the span values are pre-set, but if required the span value can be changed if required.

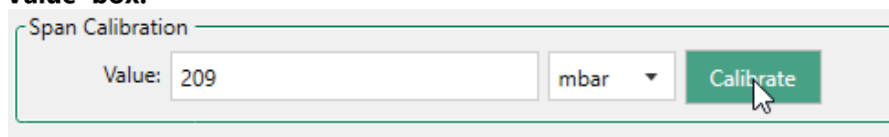


NOTE: THE FOLLOWING STEPS ARE THE SAME FOR ALL SENSORS WITHIN THE REMOTE SENSOR MODULE, BUT THE GAS TYPE & UNITS MAY CHANGE.

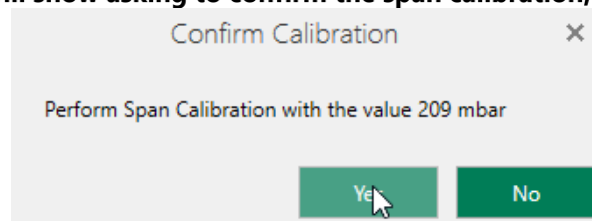


NOTE: THE R134a SENSOR DOES NOT SHOW A CALIBRATION SUCCEEDED MESSAGE, IT SHOWS A CALIBRATION REQUEST SENT MESSAGE.

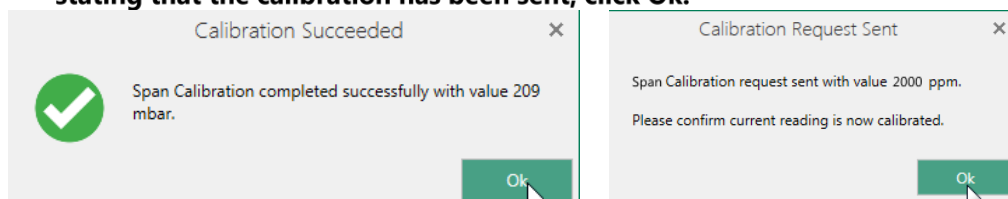
- 1] Once the sensor reading has stabilised at the specified span gas value in the device details section, click on the Calibrate button to the right of the Span Calibration 'Value' box.



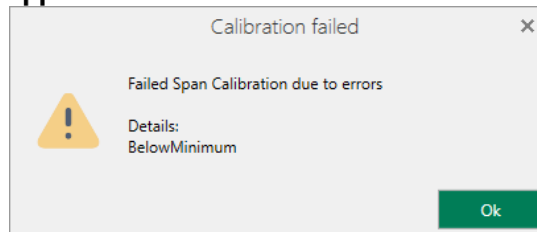
- 2] A window will show asking to confirm the span calibration, click Yes.



- 3] For O₂ and CO₂ sensors, another window will show stating whether the span calibration is successful, click Ok. For R134a sensors, another window will show stating that the calibration has been sent, click Ok.



- 4] If the span calibration fails, a window will show stating 'Calibration Failed' and a red cross will then appear next to the Calibrate button on the home screen.



NOTE:

FOLLOWING A FULL CALIBRATION, THE CALIBRATION SHOULD BE CHECKED WITH A KNOWN GAS VALUE TO CHECK CALIBRATION HAS BEEN SUCCESSFUL.

5.4 Pressure calibration



NOTE: PRESSURE CALIBRATION IS REQUIRED TO BE PERFORMED PRIOR TO ANY SENSOR CALIBRATION SO THAT EACH OF THE SENSORS ARE SEEING THE CORRECT PRESSURE AT THE TIME OF CALIBRATION.

- 1] Change the pressure value to the known ambient pressure and click calibrate.

The screenshot shows a 'Pressure Calibration' dialog box. It contains a text input field with the value '1013', a unit dropdown menu set to 'mbar', and a green 'Calibrate' button. A mouse cursor is pointing at the 'Calibrate' button.

- 2] A window will show asking to confirm the pressure calibration, click Yes.

The screenshot shows a 'Confirm Calibration' dialog box. It contains the text 'Perform Pressure Calibration with the value 1013 mbar' and two green buttons: 'Yes' and 'No'. A mouse cursor is pointing at the 'Yes' button.

- 3] Another window will show stating that the pressure calibration is successful, click Ok.

The screenshot shows a 'Calibration Succeeded' dialog box. It features a green checkmark icon, the text 'Pressure Calibration completed successfully with value 1013 mbar.', and a green 'Ok' button. A mouse cursor is pointing at the 'Ok' button.

- 4] If the pressure calibration fails, a window will show stating 'Calibration Failed' click Ok and try to repeat the calibration.

The screenshot shows a 'Calibration failed' dialog box. It features a yellow warning triangle icon, the text 'Failed Pressure Calibration due to errors', 'Details: AboveMaximum', and a green 'Ok' button. A mouse cursor is pointing at the 'Ok' button.

6 Setting the alarms

The alarms of the each of the sensors can be reconfigured to suit requirements.



NOTE: ALARM 1 (TOP) IS TREATED AS HIGHEST PRIORITY. ALARMS ARE LISTED TOP TO BOTTOM, TOP BEING HIGHEST PRIORITY, BOTTOM BEING LOWEST PRIORITY.



NOTE: ONLY ALARMS 1 TO 4 WILL BE DISPLAYED ON THE PLC

Alarms

Mode	Type	Name	Set-Point	Unit
Low Going	LoLo	LoLo Alarm	15	Percent
Low Going	Lo	Lo Alarm	18	Percent
High Going	Hi	Hi Alarm	20	Percent
High Going	HiHi	HiHi Alarm	22	Percent
High Going	HiHiHi	HiHiHi Alarm	24	Percent
Disabled	Unspecified	Alarm 6	0	ppm
Disabled	Unspecified	Alarm 7	0	ppm
Disabled	Unspecified	Alarm 8	0	ppm

Read
Write

Figure 2 Example of alarm setpoints

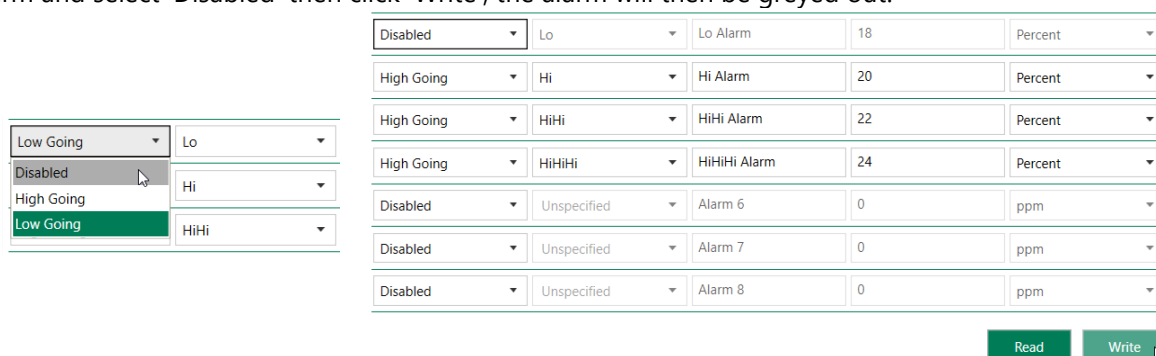
Each of the sensors alarms can be renamed, along with the mode of the alarm (Lo, LoLo or Hi, HiHi, HiHiHi) and also the alarm values and alarm types.

The underrange and overrange alarms can also be reconfigured to suit the requirements of the sensor, these can be reconfigured by enabling available alarms slots (Depending on sensor type), depending on the number of underrange and overrange alarms required.

The alarms set within the sensor can be read into the tool by clicking the 'Read' button.

6.1 Enabling/disabling alarms

To enable or disable an alarm, simply use the dropdown in the 'Mode' column next to the chosen alarm and select 'Disabled' then click 'Write', the alarm will then be greyed out.

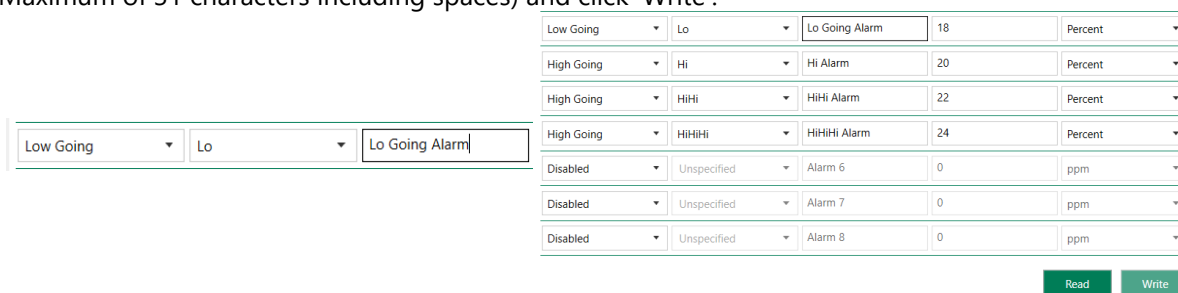


Disabled	Lo	Lo Alarm	18	Percent
High Going	Hi	Hi Alarm	20	Percent
High Going	HiHi	HiHi Alarm	22	Percent
High Going	HiHiHi	HiHiHi Alarm	24	Percent
Disabled	Unspecified	Alarm 6	0	ppm
Disabled	Unspecified	Alarm 7	0	ppm
Disabled	Unspecified	Alarm 8	0	ppm

Read Write

6.2 Changing alarm names

To change the alarm name, type the new name in the 'Name' text box next to the required alarm (Maximum of 31 characters including spaces) and click 'Write'.

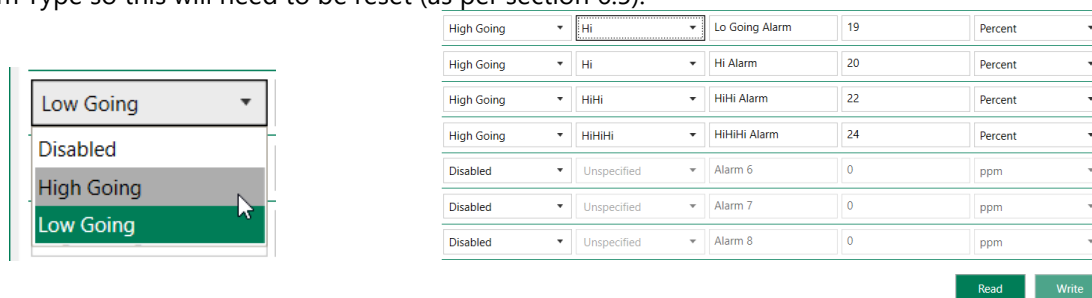


Low Going	Lo	Lo Going Alarm	18	Percent
High Going	Hi	Hi Alarm	20	Percent
High Going	HiHi	HiHi Alarm	22	Percent
High Going	HiHiHi	HiHiHi Alarm	24	Percent
Disabled	Unspecified	Alarm 6	0	ppm
Disabled	Unspecified	Alarm 7	0	ppm
Disabled	Unspecified	Alarm 8	0	ppm

Read Write

6.3 Changing alarm mode

To change the alarm mode, from say LowGoing to HighGoing, use the drop down in the 'Mode' column next to the chosen alarm, then click 'Write' (Changing the Alarm Mode will automatically clear the Alarm Type so this will need to be reset (as per section 6.5)).



High Going	Hi	Lo Going Alarm	19	Percent
High Going	Hi	Hi Alarm	20	Percent
High Going	HiHi	HiHi Alarm	22	Percent
High Going	HiHiHi	HiHiHi Alarm	24	Percent
Disabled	Unspecified	Alarm 6	0	ppm
Disabled	Unspecified	Alarm 7	0	ppm
Disabled	Unspecified	Alarm 8	0	ppm

Read Write

6.4 Changing alarm value

To change the alarm value, type the new alarm value in the 'Value' box in the Set-Point column next to the chosen alarm and click 'Write'.

Low Going	LoLo	Lo Going Alarm	19	Percent
Low Going	LoLo	Lo Going Alarm	19	Percent
High Going	Hi	Hi Alarm	20	Percent
High Going	HiHi	HiHi Alarm	22	Percent
High Going	HiHiHi	HiHiHi Alarm	24	Percent
Disabled	Unspecified	Alarm 6	0	ppm
Disabled	Unspecified	Alarm 7	0	ppm
Disabled	Unspecified	Alarm 8	0	ppm

6.5 Changing the alarm type

To change the alarm type, from say LoLo to LoLoLo, use the drop down in the Type column next to the chosen alarm to change, then click 'Write'.

Low Going	LoLo
High Going	UnderRange
High Going	Lo
High Going	LoLoLo
High Going	HiHiHi

Low Going	LoLoLo	Lo Going Alarm	19	Percent
High Going	Hi	Hi Alarm	20	Percent
High Going	HiHi	HiHi Alarm	22	Percent
High Going	HiHiHi	HiHiHi Alarm	24	Percent
Disabled	Unspecified	Alarm 6	0	ppm
Disabled	Unspecified	Alarm 7	0	ppm
Disabled	Unspecified	Alarm 8	0	ppm

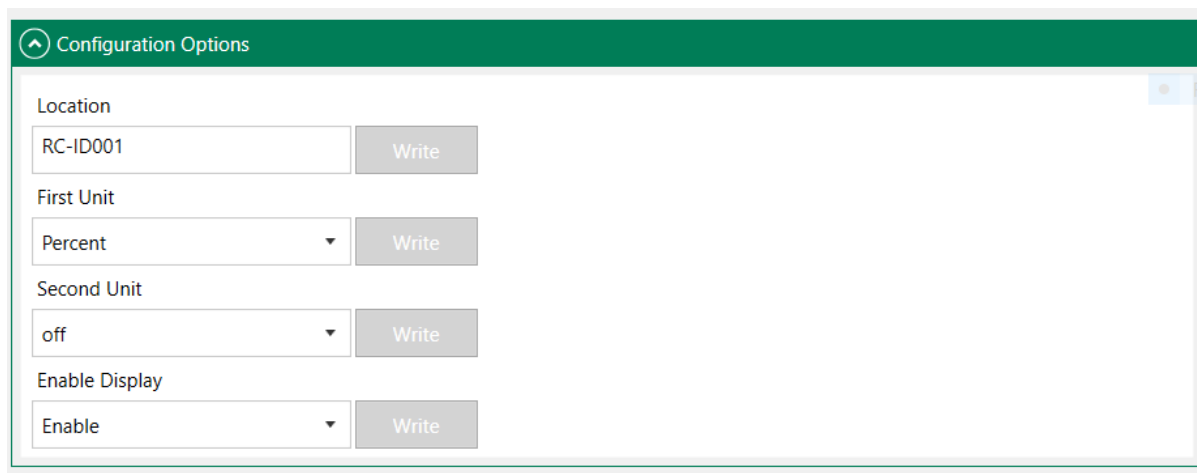


NOTE:

FOLLOWING ANY RECONFIGURATION, THE PARAMETERS SHOULD BE CHECKED WITH A KNOWN GAS VALUE TO CHECK RECONFIGURATION HAS BEEN SUCCESSFUL.

7 Setting the Configuration Options

For Interface Boards fitted with a display, the Configuration Options expander allows a user to modify the settings shown on the display.



The screenshot shows a 'Configuration Options' window with a green header. Inside, there are four configuration items, each with a text input field and a 'Write' button:

- Location:** Input field contains 'RC-ID001'.
- First Unit:** Dropdown menu shows 'Percent'.
- Second Unit:** Dropdown menu shows 'off'.
- Enable Display:** Dropdown menu shows 'Enable'.

The table below lists and describes the available configuration options.

Field	Options	Comment
Location	Up to 8 character string	Sets the Location description
First Unit	mBar, kPa, percent(%), ppm	Sets the first gas unit
Second Unit	off, mbar, kpa, percent(%), ppm	Sets the second gas unit. The second gas unit can be turned off.
Enable Display	Disable or Enable	Turns on or off the display

7.1 Setting the Location description

The Location is an editable field which allows up to 8 characters to be entered. Enter characters and click on the Write button to update the Location.



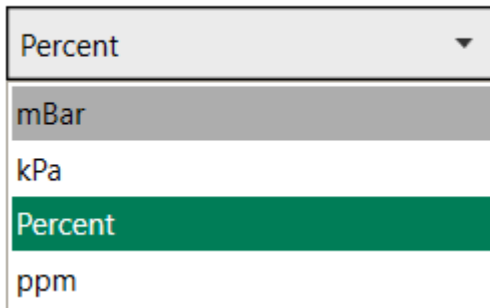
This screenshot shows a close-up of the 'Location' configuration. It consists of a text input field containing 'Room 01' and a green button labeled 'Write'.

7.2 Setting the First and Second Units

The First and Second gas units can be set, independently, via their drop-down combo boxes.

To change a gas unit, click on the down arrow, select an option and click on the Write button to update the gas unit shown on the display.

First Unit



A screenshot of a web-based dropdown menu for 'First Unit'. The menu is open, showing a list of options: 'Percent', 'mBar', 'kPa', 'Percent' (highlighted in green), and 'ppm'. The 'Percent' option is currently selected.

First Unit



A screenshot of the 'First Unit' dropdown menu with 'mBar' selected. To the right of the dropdown is a green button labeled 'Write'.

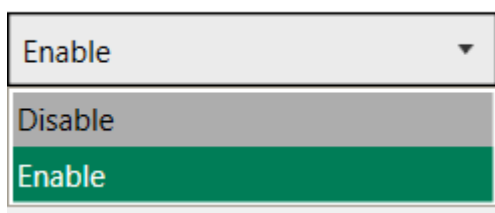
The Second Unit is set in the same way, but has an additional option of 'off' which does not show the second gas reading on the display.

7.3 Enable or disable the display

The display can be configured so no readings or information is shown. That is, the display is completely blank.

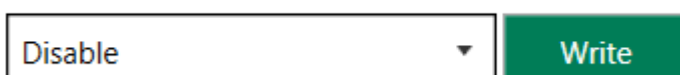
To enable or disable the display, click on the down arrow, select an option and then click on the Write button to update the display.

Enable Display



A screenshot of a web-based dropdown menu for 'Enable Display'. The menu is open, showing a list of options: 'Enable', 'Disable', and 'Enable' (highlighted in green). The 'Enable' option is currently selected.

Enable Display



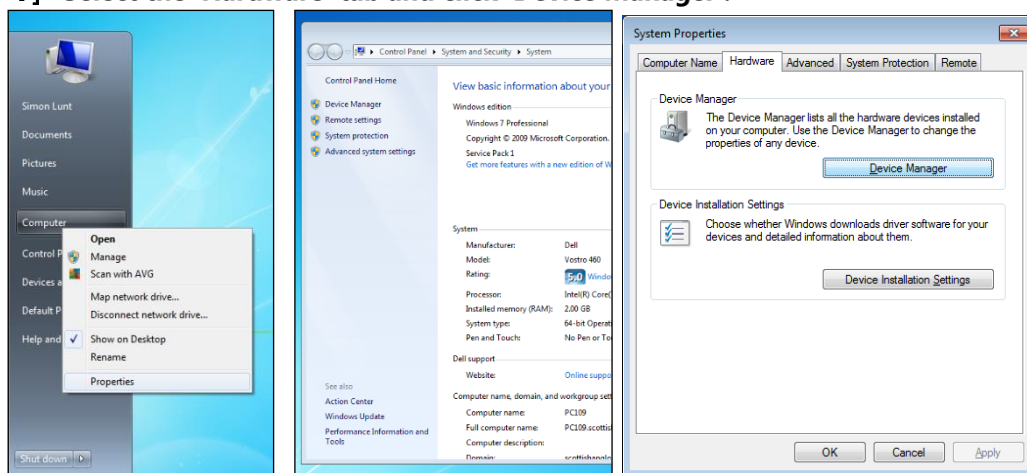
A screenshot of the 'Enable Display' dropdown menu with 'Disable' selected. To the right of the dropdown is a green button labeled 'Write'.

Appendix A Installing the comms cable drivers

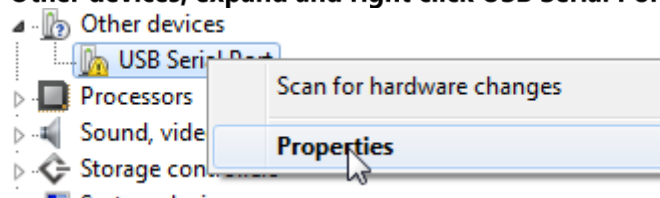
In some cases, the drivers for the Comms Cable USB lead will automatically install and connection to the sensor module will work correctly.

If the drivers for the Comms Cable USB lead do not install and connection to the sensor module through the PC tool cannot be made the drivers will require installing.

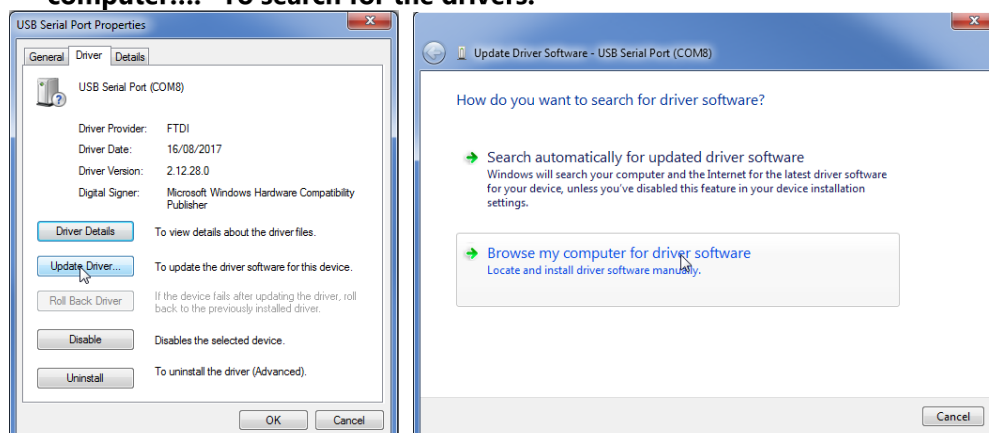
- 5] With the Comms Cable USB lead plugged into a PC or Laptop, access the system properties window by clicking on the Windows start menu, right-clicking on 'Computer' and selecting properties.
- 6] On the system properties window, click 'Advanced system settings'.
- 7] Select the 'Hardware' tab and click 'Device Manager'.



- 8] Look for Other devices, expand and right click USB Serial Port and select Properties.



- 9] Click on the Driver tab, then click Update Driver, then select "Browse my computer...." To search for the drivers.



10] In the next window, select Browse and navigate to the software CD



11] Select the USB485-232 WinDrivers folder and select OK, then click Next, the drivers should install and the Comms Cable USB lead will be ready to use.

