Configuration / Communication Initial Set-Up.

T4020-01 for T4020 T5020 and Z5020 Gauge ranges

FTDI Chip Interface converter cable.
If you have this type, these will work with all Versions of Windows.

1/. These units “SELF DOWNLOAD DRIVERS”

But only when your PC is connected to the Internet.

The screen will show driver download status And will say when the download is complete.

2/. If the drivers are installed correctly, the Communication Port can be verified in the PC’s “Hardware Profiles” as this will be needed when the Configuration software is loaded and communication to the Gauges is required.

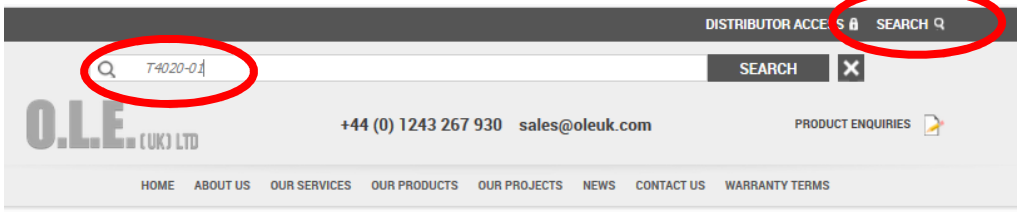
Please note, OLE are not a PC support company, so please do not call us asking for help to find the port allocation.

(Some of this is defined in “How to set up the Configurator” in the Document Download section for the Gauges and this T4020-01).

3/. Please ensure the Gauge is in “Standard Mode to talk with the configuration software. (This is shown during power up, bottom right). If it says Modbus, change this to Standard (See I@O Manual, or please consult our web site FAQ section.)

Configuration Software.

Please download the Gauge configuration software from www.oleuk.com



Download from the link shown below (T4020-01 Search)

T4020/T5020 Tank Gauge Configuration
A Step by Step Guide.

PD02/0004 - Revision: 01 - March 2017

The set-Up of T4020/T5020 Tank Gauge system using Interface lead and he software on a PC / Laptop.
Latest version of the software is ***V1.0.0.16***
Tank Gauge adjustments can be made with the T4020 Configuration software.
This needs to be loaded on to Service Laptops or an Office PC.

1st Issue that will nearly always catch you out. Are the gauges set in "Modbus" mode, or if they are in "Standard" mode. To talk to the gauge with the configurator software, the gauge needs to be in "Standard" mode. If it is not in "standard" mode, disconnect the power lead (24vdc supply), and hold down the front alarm test button (**PRESS/HOLD TEST BUTTON**) for 3 seconds and then reconnect the power, hold for another second. (Front display will change to from "Modbus" to 'Standard), if not, just remove power and reapply power. (Cycle power again when finished.)

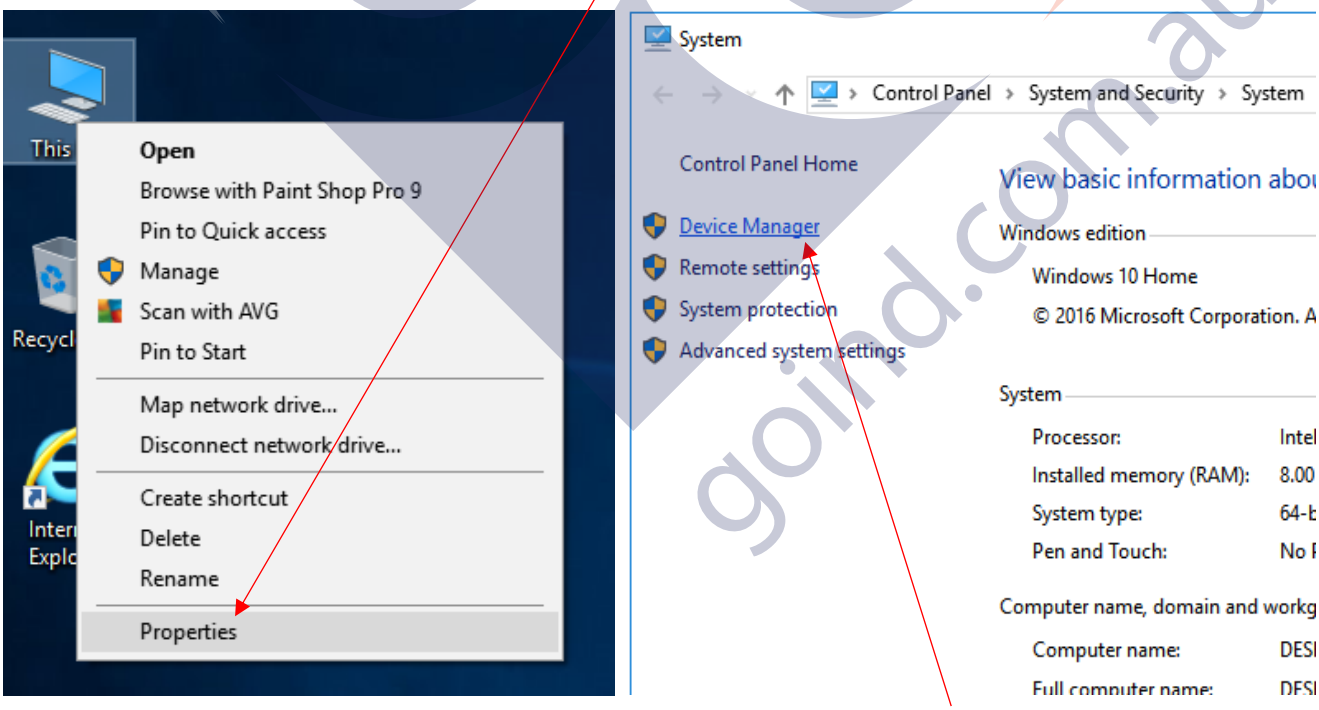
2nd Issue, the comms lead will not talk to the tank gauge. "USB Serial Com Port" not set to correct COM port address. See below on how to set up or document ***PD02/0003.***

This is the port you require to set the configurator, this is achieved by following the instructions for ***the Device Manager*** below.

IF YOU HAVE ANY ISSUES WITH SETTING UP / ACCESSING THE DEVICE MANAGER PLEASE REFER TO DOCUMENT ***PD02/0003*** **– DEVICE MANAGER CONFIGURATION.**

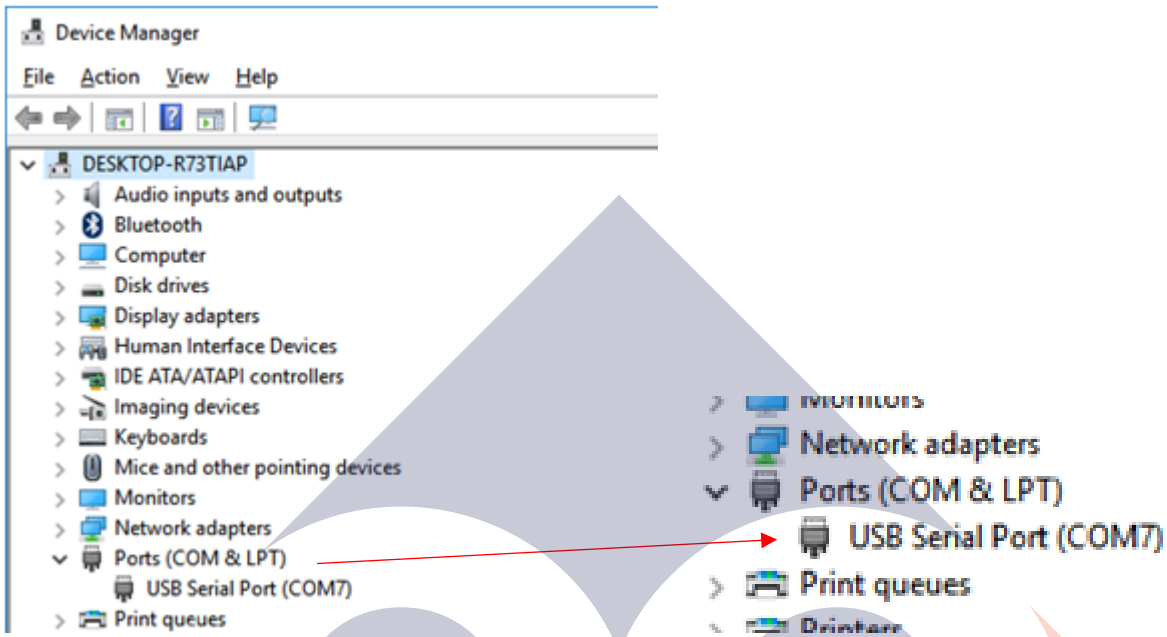
Windows Setup (Windows 10) / Device Manager.

Left click on the ***This PC*** icon. Scroll down and click on the ***Properties*** tab.



This will open the Control Panel / System and Security / System page. Click on the ***Device Manager*** Icon.
This will bring up the device manager page.

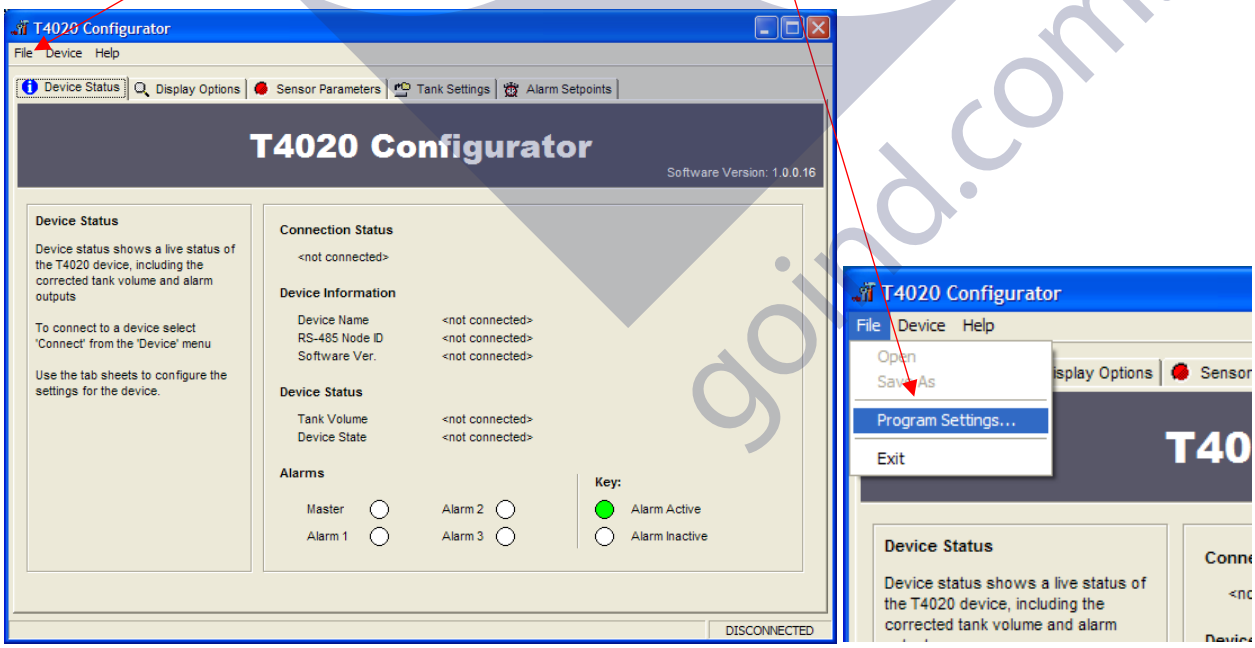
Scroll down and there will be a folder ***Ports (COM & LPT)*****.** It should show the USB Serial Port with the Com port it is attached to, in this case, (***COM7***), this will vary on whatever computer the programmer is attached. This is the figure that is entered in the T4020 Configuration Software. The communications lead RED LED should flash when you try to connect the USB programmer to show the address for the lead is correct.



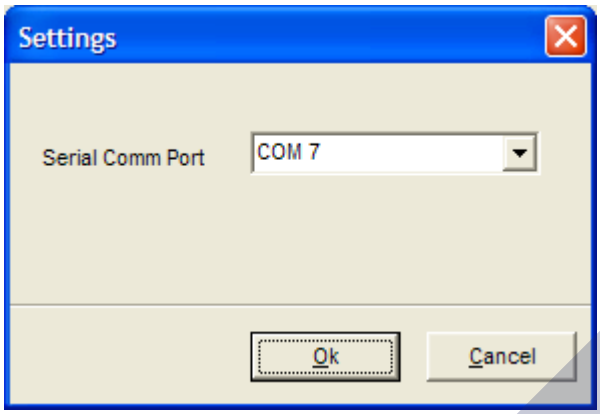
Connect the Programmer to the T4020 / T5020 Unit as shown in Page 7.

T4020 Configurator (Configuration) Software.

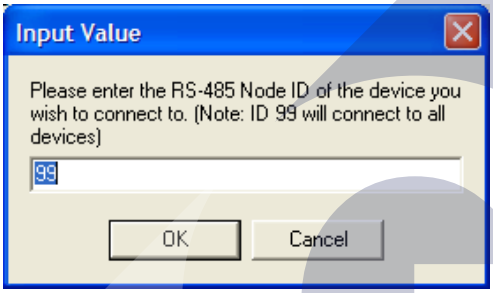
Next step is to open the T4020 Configuration Software.
Click on the ***File*** tab. On the dropdown menu, click on the ***Program Settings*** tab.

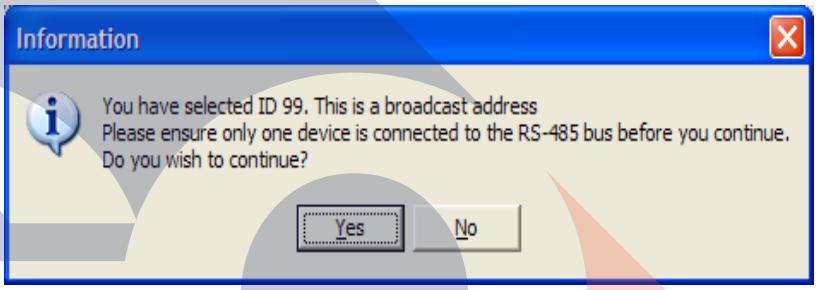


This will open the ***Settings*** screen (Shown Below). Select from the dropdown menu the Com Port number (as shown in the device manager) and click OK.

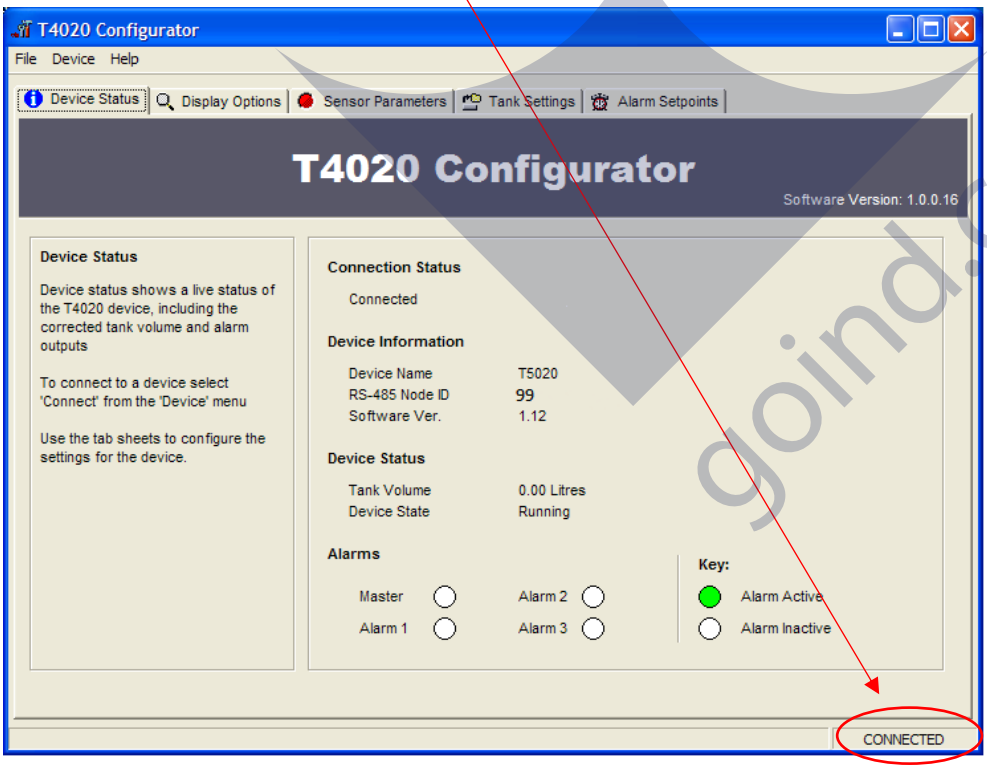


Next step, click the ***Device*** tab at the top of the screen and click ***Connect***.
A pop up screen, ***Input Value*** will show, click on ***OK***.
Node ID 99 is a global address which will work if only have one gauge connected.

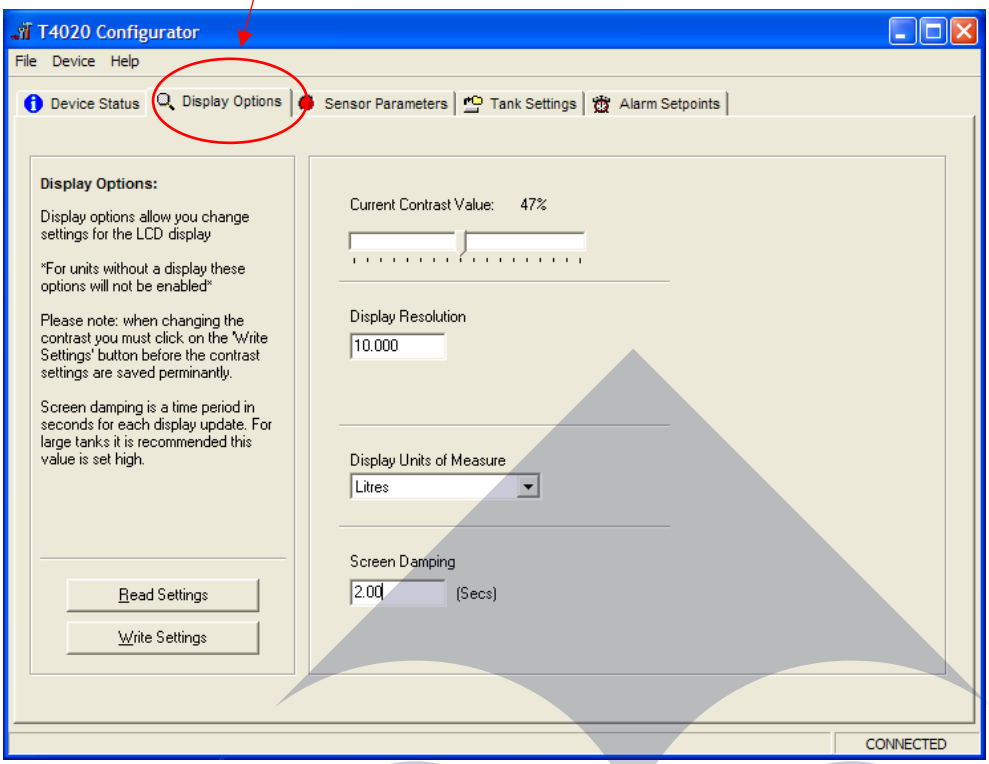




Click on ***Yes*** on the ***Information*** screen.
Now the software will connect and "talk" to the unit, as shown in the bottom left of the configuration screen.
When the unit has connected, it will show **CONNNECTED** in the bottom right of the Configuration Screen.



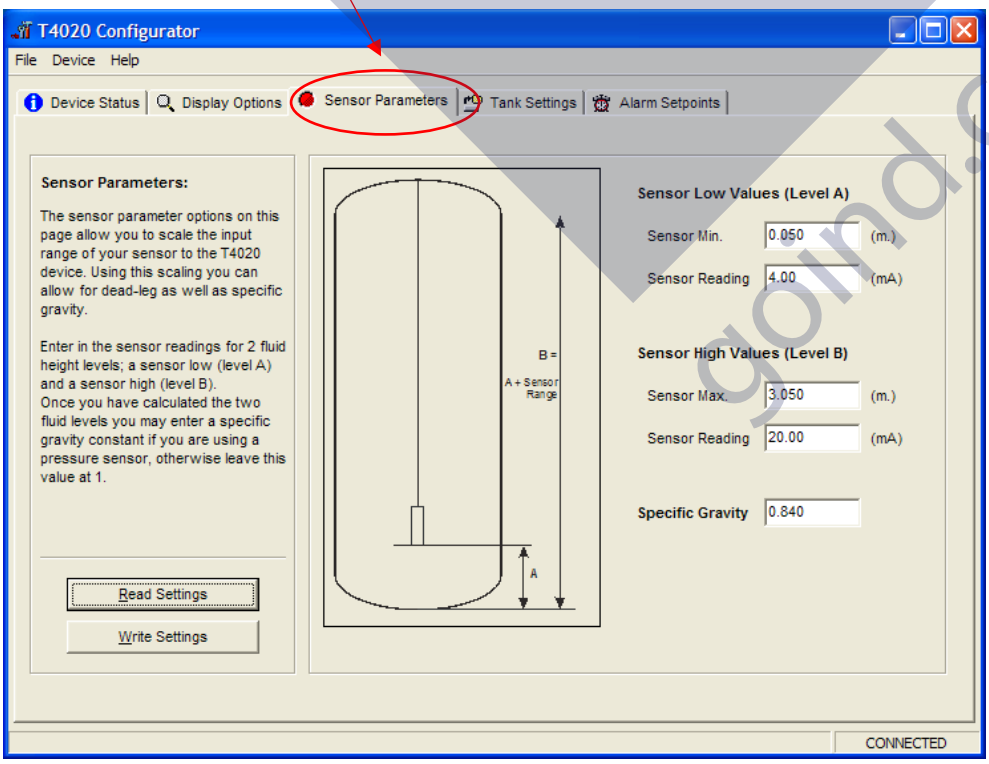
Click on the ***Display Options*** tab.



Current Contrast Value, default is 47%. Set as required.
Number of Significant figures is 5. On the T5020, there is the option to choose ***Resolution of Display***, e.g. 50 Litres or 10 Litres etc. Set as required. ***10.00*** for instance.
Display Units of Measure, set to ***Litres*** unless otherwise requested.
Screen Damping, makes the screen more stable, suggest *2* Seconds.

When this screen is complete, Click ***Write Settings***.

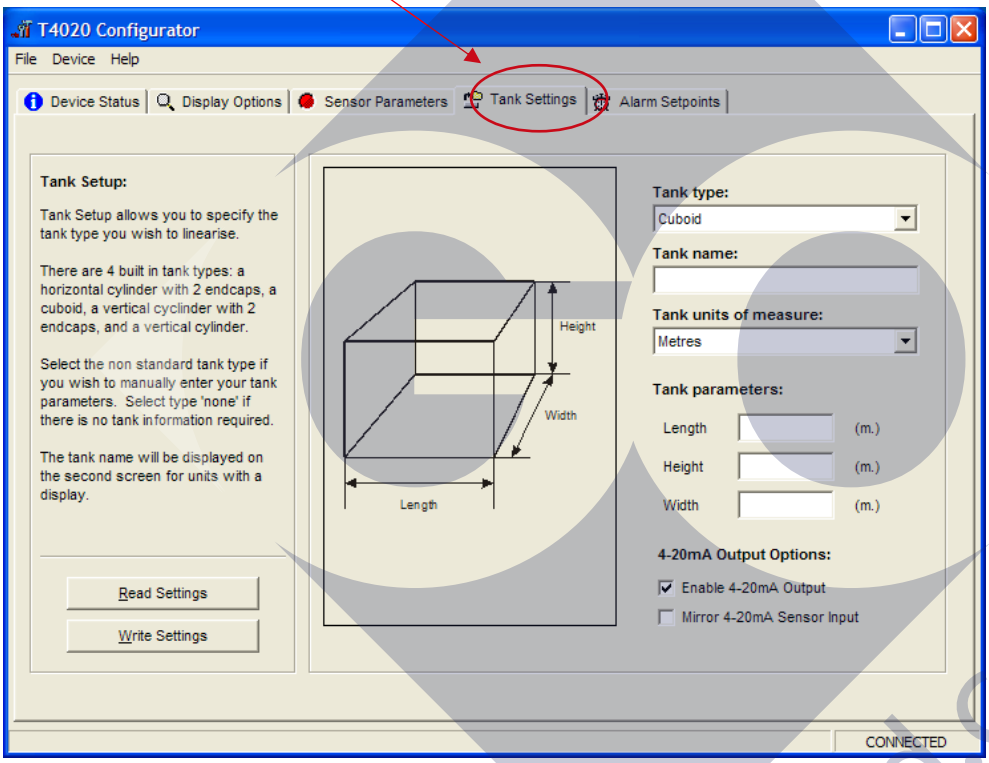
Click on the ***Sensor Parameters*** tab. **Note: Set to Suit the Sensor, NOT TE TANK.**



Sensor Min, set to ***50mm*** (0.05m) as standard.
Sensor (Min) Reading set to *4.00mA*
This would mean for example a 2m Sensor, would be set as a Sensor Min 0.05m to a Sensor Max 2.05m.
and a 3m Sensor would be Sensor Min 0.05m and Sensor Max 3.05m etc.
Sensor Max, set to Sensor 0.05m plus the Sensor length as shown in example above.
Sensor (Max) Reading set to 20.00mA
Enter the ***Specific Gravity*** of contents. Enter the value of what is required from the list below.
Gasoil = 0.84 / Diesel (Derv) = 0.835 / Kerosene = 0.80 / Petrol = 0.745 / AdBlue = 1.09
Rapeseed Oil = 0.92 / Lube Oil = 0.89 and Antifreeze = 1.11

When this screen is complete, Click ***Write Settings***.

Click on the ***Tank Settings*** tab.



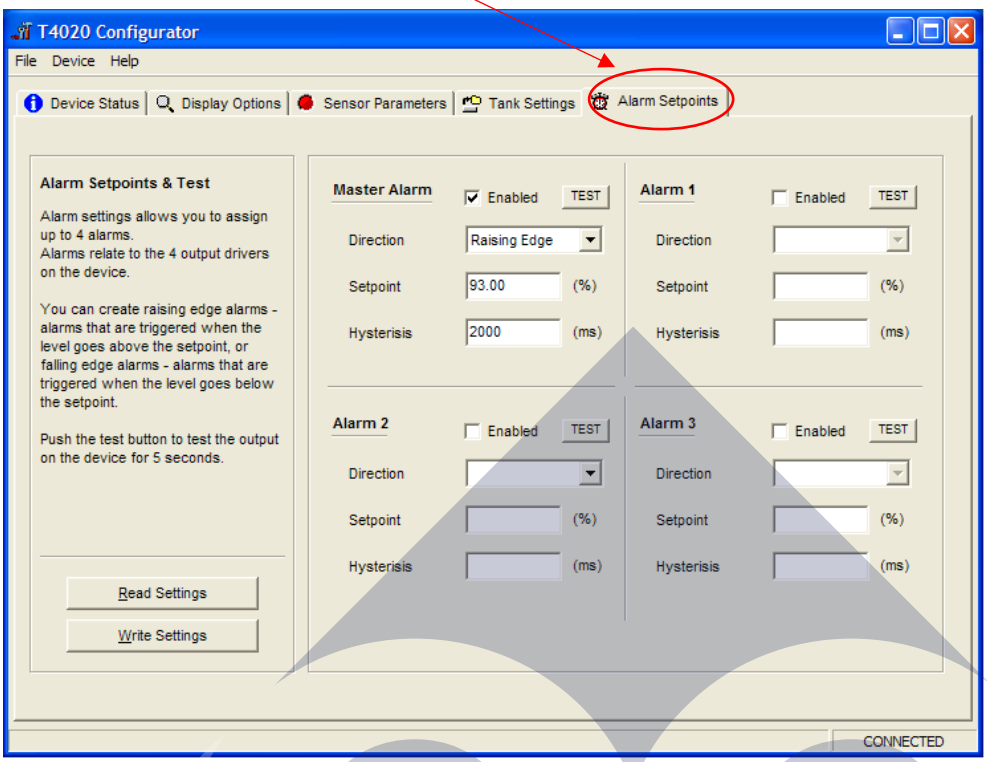
The next step is to set the tank shape up. Enter the tank type from the scroll down menu, a name for the tank and the measurements.
Note that the tank can be taller than the sensor range due to specific gravity.

For example, the tank as being 2.2m tall. If we say this is Diesel (DERV), then 2.2 x 0.835 = 1.837 affective range on the sensor. This means we can use a 2.0m sensor in a 2.2m tank.
(A 3m sensor will work fine as well).
Ensure that the Enable 4-20mA Output is ticked.

Please make sure the Mirror Output box is NOT 'Checked' (ticked). If it is we need to discuss.
The Mirror input may be used when a second Gauge is set exactly the same as the first. Alternatively, the second Gauge can be set to have the Sensor Parameters the height of the primary tank and this will work over the full 4-20 milliamp range of the first gauge output. No sensor offset required.

When this screen is complete, Click ***Write Settings***

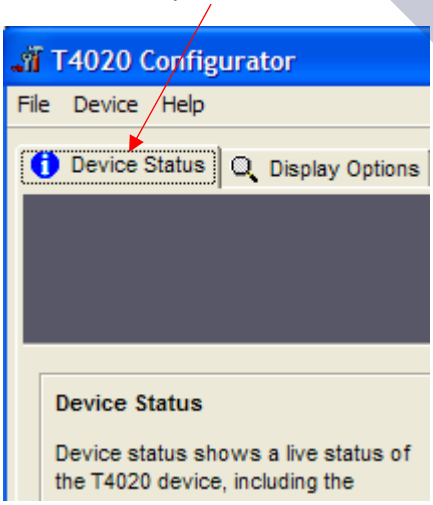
Click on the ***Alarm Setpoints*** tab.



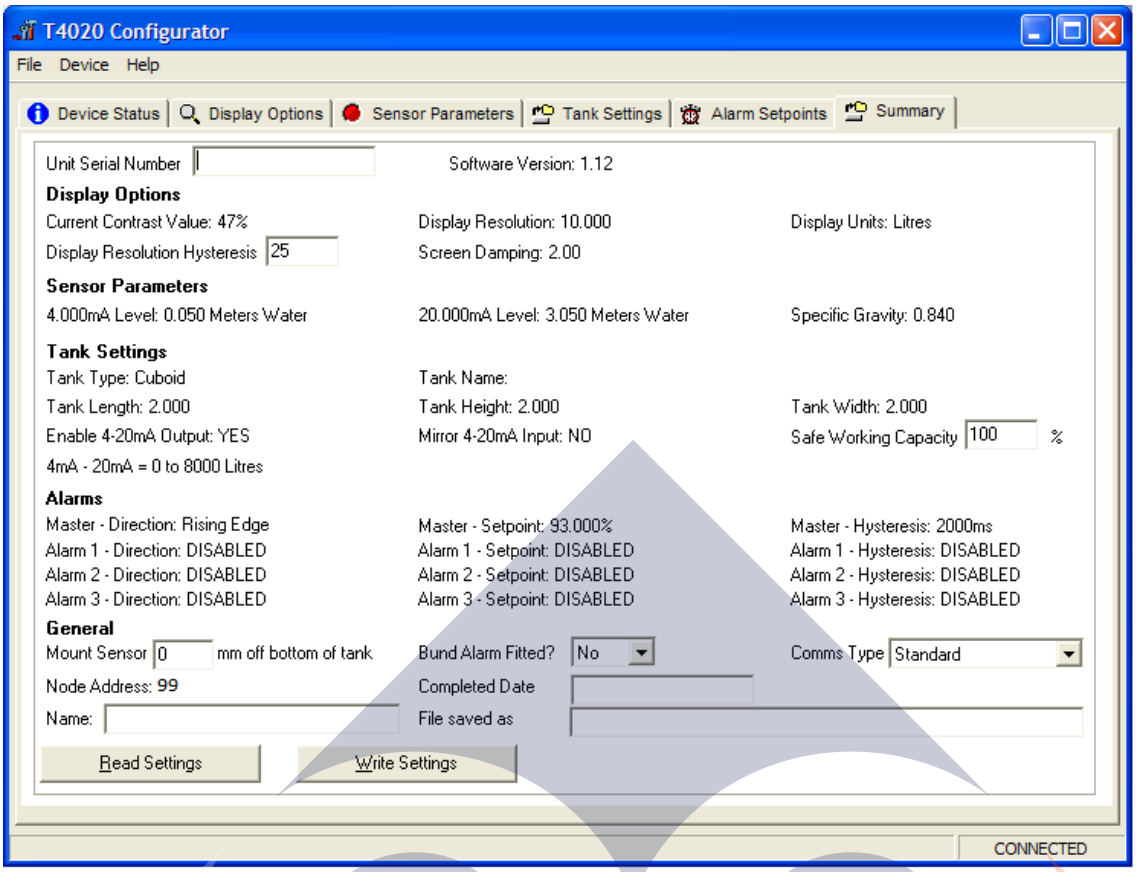
Set the Alarm settings as required (High is normally 95% Rising).
Set the "Direction" to "Rising" or "Falling". This will result in energising the Relays (R5 Option Board) if fitted in that 'form'.
Rising at 95% on the M alarm will output 24vdc when the level increases to 95%.

When this screen is complete, Click ***Write Settings***.

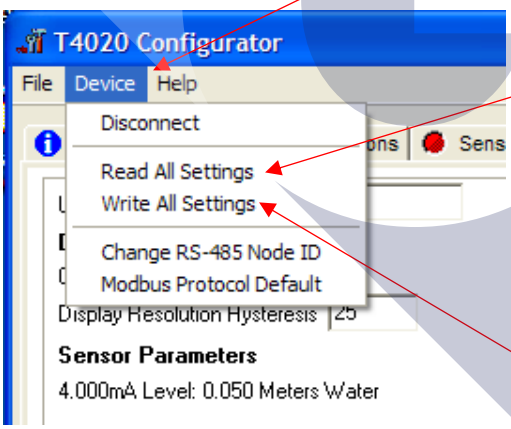
Next step is to Access the T5020 additional settings and Summary Screen, press the ***Ctrl***, and letter ***H*** keys simultaneously, and click on ***Device Status*** Tab.



This will bring up the summary screen of what has been programmed into the unit as shown below



The Summary page. Click on the ***Device*** tab at the top of the screen and click ***Read All settings***. This will display all the settings that has been programmed. Next stage is to enter the final information on this screen.



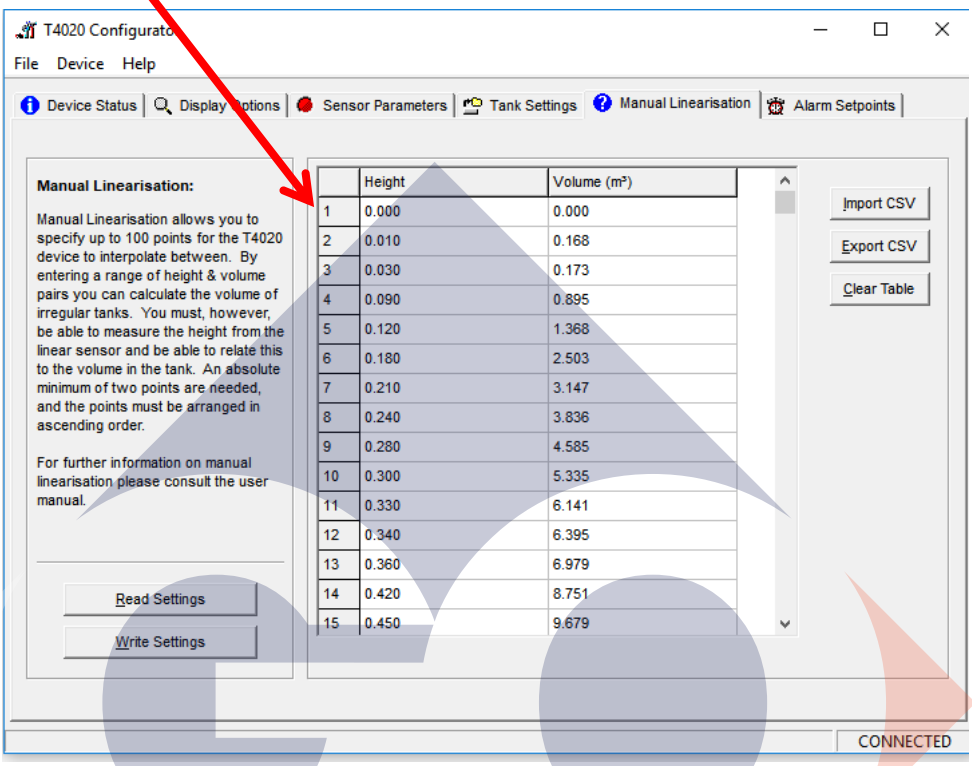
Unit Serial Number: This is the serial number on the label of the front of the unit.
Safe Working Capacity: If the unit is a T5020, the Safe Working Capacity can be set to say 97%. In this case the Alarms are based on the Safe Working Capacity value, so 10,000 litre tank has SWC of 9,700 litres. An Alarm set at 95% will be 95% of 9,700 litres, not of 10,000.
Mount Sensor: 50 mm off the bottom of the tank.
Bund Alarm: If fitted, click **YES**, if not, Click **NO**.
Comms Type: Generally, set to **Standard**.
Name, Who, setup the unit, ***Date*** when setup and a ***File Saved as*** Name. XXXXXXXX.tls
Click the ***File*** tab at the top of the screen and then "***Save As***". When this screen is complete, click the ***Device*** tab at the top of the screen again and then ***Write All Settings***.
ONLY READ AND WRITE SETTING FROM THE DEVICE TAB AT THE TOP OF THE PAGE.
If you have selected 'Non-Standard' as the tank type and put in a strapping table, you may have to "Write All Settings" Twice. Click on ***Disconnect***. Remove the programming lead. This completes the calibration.
Result, you should have a fully calibrated working Gauge, with 4-20 mA proportional to Litres, and either a ***Standard*** or ***Modbus*** RS485 output.

goind.com.au

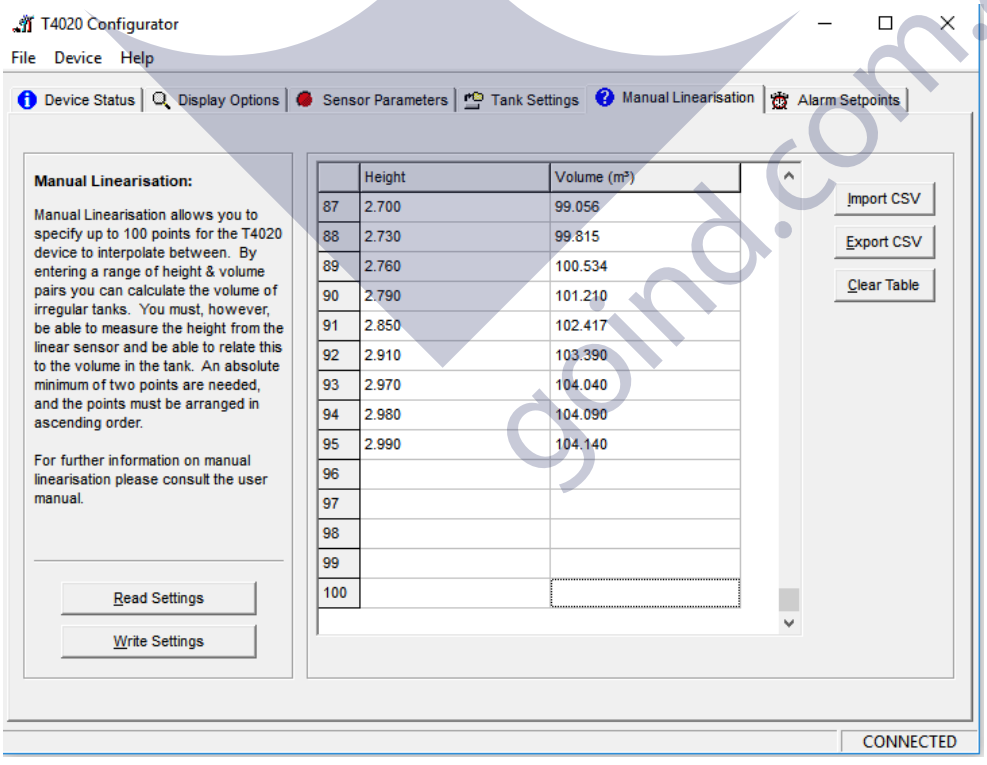
T5020/Z5020 **Use/Import of Strapping Tables (.csv files) - Addendum**

First table value (line 1) must be **0.00** for both **Height** and **Volume**, see below

Height:	in Metres	1 metre = 100cm
Volume:	(m^3)	1 cubic metre = 1000 ltrs

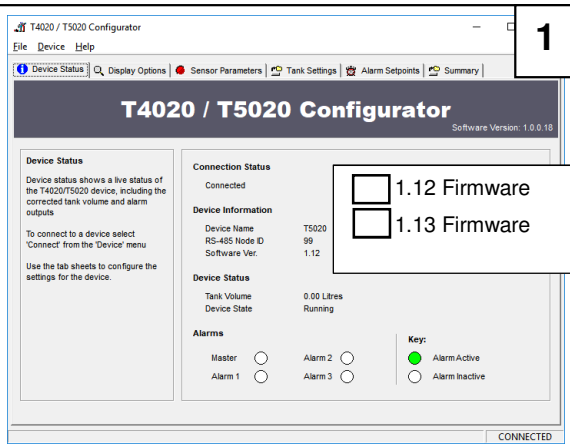


The maximum number of lines that can be input/imported is 95 (including 0.00)



If 96 lines or more are input, the gauge will need to be returned to OLE for a reset and reload of firmware.
(this can cause the gauge to display 0 Ltr, or display HIGH)

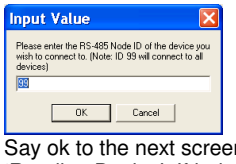
1



☐ 1.12 Firmware
☐ 1.13 Firmware

Select Device Connect, and you will be given the option to enter a Node ID.
For individual gauges or stand alone gauges, use '99'.
(When multi-drop communications are used, name each device 1 to 32). (Screen scroll tells you what this is)

2



Unit Serial No-_____

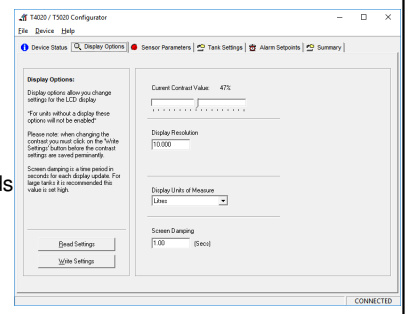
Model T5020 ___ / Z5020 ___

Say ok to the next screen, and then the main screen bottom left should show 'Reading Device'. If it does not, power down and reconnect and verify on the front screen the node ID, and try again. (Are you using correct soft / firmware versions). Once connected the unit will advise 'connected' bottom right.
The display main screen will now show current live readings.
Move to Contrast Value set the display to about 50% or 52% _____

Set display units 'Litres' ?

Set screen damping to _____ seconds
(suggest 2 seconds)

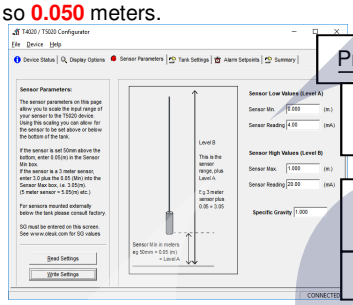
Then select 'Write Settings'



3

Sensor Parameter Screen.

Set the 4.00 mA level '**A**' **to the distance the probe will be from tank bottom.** This is usually 50 mm so **0.050** meters.



Probe = _____

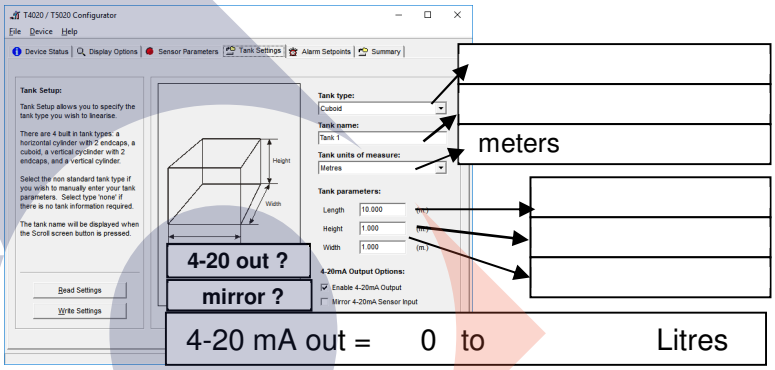
A		mtrs
	4.0	mA
B		mtrs
	20	mA
SG		

The **S**pecific **G**ravity is the gravity of the liquid to be measured.
1.0 = water. 0.755=LRP (unleaded) 0.835 = DERV (diesel)
1.09 for AdBlue, 0.79 for Kerosene, and 0.84 for Gasoil etc.

The 20 mA point 'B' is the range of the probe in 'meters' plus the offset 'A' above, So a 2500mm range probe, 50 mm from bottom will be 2.550 meters.
(Probes are coded eg A22 = 0-2500 mm)

4A

Tank Settings Screen.
This is where the actual tank shape is entered.



Select the Tank Type. (If you have a non standard tank, chose that).
Name the Tank. IMPORTANT, this name shows on display SCROLL, and should only be up to 8 letters / numbers long

Fill in tank dimensions in 'meters'. (1000mm = 1 Meter) (1 "= 0.0254 M)
If required select 'Mirror output' This is required if the raw signal is to be used and read on another Gauge display mounted elsewhere.

Notes

If BUND alarm is incorporated, this has an auto set-up

IF Fitted = JUMPER ON?? MODBUS ☐ or STANDARD ☐

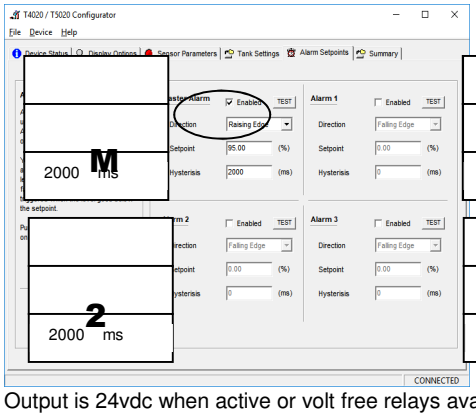
4B For Non standard tanks or dip stick measured data, you need to enter the heights of liquids and the volume this relates to.
For example, 0.120 meters (120 mm) = 0.2 cuM (200 litres). You must enter details as Meters and Cubic Meters. There are a minimum of 2 points and a maximum of 90. You can import these values from a .csv file if available.
(List these details on the back of this form).

Alarm Screen
For a local HIGH ALARM, the 'Master' Alarm is used.
Set this at what ever % you require. Ie 95%.
This will now alarm at 95% of tank contents.
Set the Hysteresis as required. We suggest 2000 milliseconds

5

The M Alarm can be acknowledged from the front panel. Please consider this when wiring outputs into Building Management Systems

The Alarms 1,2,3 can not be acknowledged locally.



M 2000 ms
1 2000 ms
2 2000 ms
3 2000 ms

Output is 24vdc when active or volt free relays available (R5)

Communicating with the device by RS485, you should ensure the RS Node Address is set. Click Device and 'Change RS485 Node ID'

Now Click 'Device' on top tool bar, and 'Write All Settings'
This can take some time if the Non Standard Tank Feature has been used.

Now please SAVE THE FILE to your PC, and **'DEVICE'** and **'DISCONNECT'**.

File saved as : _____

This is a .tls file and can be e-mailed to OLE for assistance.

COMPLETED DATE _____ **NAME** _____

Using "CTRL + H" and click on "DEVICE STATUS" a "SUMMARY SHEET" tab is shown and can be printed or pasted

Trouble shooting:
Device Fails to connect: Cycle the power to the T4020. Check RS485 connections are good. Check PC communications port is correct ?
Device Fails to connect: Check Software version you are using is compatible
Device Fails to connect: Check on power up that Standard is selected. If not, power down, and power back up, holding down the alarm test button. The front screen should show then either Modbus or Standard. (Consult OLE)

Alarm does not go off at the correct percentage contents point: Check the Mirror Output Flag. If this is set and required, calculate the % setting for the the sensor as shown.
Alarm keeps going off when the set point is nearly reached: Set the hysteresis value higher to avoid 'bounce' causing alarms.