V2.6Mn DynamicAc

LIQUITRACK
Monitor your asset.

Functions and Guidelines

Liquitrack V2.65 v1.19s

The V2.6 is a programmable logic controller, that will provide a secure paper free digital ledger of fuel transactions performed on site. It will provide a secure method of dispencing fuel. All fuel dispensed will be allocated to a specific vehicle and accountable to specific user. It will not be possible for any unauthorised person to use the pump. The reports are transmitted via a 2G, 128 bit encryted VPN tunnel, ensuring safety.

N.B If the main MCB circuit breaker is off, power will not be supplied to the router which means it will not be able to upload the daily reports to the server. Only switch the main circuit breaker off in an emergency or if the system requires restting for some reason. If the system is fitted with a power back -up battery this will also require dis-connection to reset. To do this the flap in the booth stem, must be opened and the red and black connector must be parted. After reset it must then be reconnected. The battery back up will enable the user to complete the last transaction if there is a power failure.

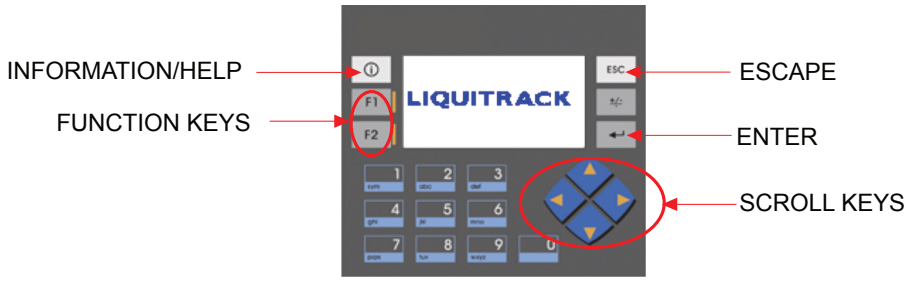
Note:
Please use a pencil with a rubber end to interact with the PLC. (no steel or sharp objects) or a touch screen stylus
Please use a damp cloth with mild soap to wash the screen.
Please ensure the date and time are correct.
Please note there may be a minor difference between digital and analogue flow meter recordings
Please note that the bulk fuel level is best used as a guideline. (Those with a level installed)
Please keep authorisation Pins in a private and secure location.
Please note Liquitrack cannot be responsible for any loss of data due to connection failure resulting from inadequoate G2/G3 signal.
Please note Liquitrack cannot be responsible for damage to equipment if tampered with.
Please note that the list of recorded transactions will also be available for reading on the PLC until such time that a further 120 transactions have occurred.
Please note that the fuel efficiency culculation requires that the vehicle is filled to the same fill level on each refill.

Basic Dispensing Process

1. Press the ,ESC> to escape from the the screen saver if active.
2. Select <Dispensing> on the main menu by scrolling with the arrow buttons or pressing the number 4 key..
3. Select your username by scrolling using the arrow buttons, <> and enter your 4 digit PIN number in the block interface provided by using the keypad.
4. Select the vehicle being filled by scrolling using the arrow buttons. <>
5. Enter the vehicle odometer/hour reading into the block interface provided. Use the <Enter> button to select the input interface..The odometer/hour reading must be greater than the previous amount entered for the same vehicle. If an error was made previously then Administrative privilages will be required to overide the verification.Press the <Enter> button again to confirm the input before proceeding.
6. Fill the vehicle with the fuel to the recognised maximum. Enter this amount into the interface provided by pressing the enter key. Please note you can only enter this amount ounce, so please check this amount is correct before pressing the enter for the secound time which will confirm the value entered.
7. Check all the details are correct on the confirmation screen. Use the arrow keys to scroll. Press 1 to confirm or 2 not to confirm. In the case where the data is incorrect,please inform your Administator emmediatly.
8. Ounce the data in confirmed it will be logged to the server. Data can also be checked by looking under the datatable icon.

The system cannot be used without a PIN number Please keep the user pin numbers in a secure and safe location.

KEY FUNCTIONS



DO NOT PRESS THE KEYPAD WITH SHARP OBJECTS!

V2.1

2/6/16

Options

The display can be in 3 different sized formats.
- 2.5 inch touch panel
- 3.5 inch touchscreen,
- 7.0 inch touchscreen.

Other options are available for larger processing and memory, multiple pump systems and remote operation with RFID and thermal printing.

1.Reports Live or updated at midnight
The Live system is dependent on cell phone signal which can be intermittant meaning if a connection cannot be established, a transaction will not confirm disabling the user to dispence until such time as a reliable connection is established.

2.The midnight report upload.

Reports

Reports compiled with fleet card data will require a proxy from the specific 3rd party, and should comply to certain criteria to match database use.

Entries with [UNAUTH] represent illigal use of pump

Entries with [UPFILL} represent fuel entering the bulk tank

Screensaver / Power Saver and Light

The screen will automatically switch to a screensaver after 45 minutes. This will continue for a further 5 minutes after which the screen will turn off to save power. The screen can be activated again by touching it, causing a return to the menu screen. The booth light will also be activated on screen touch for the 30 minutes.

Electrical Enclosure

The electrical enclosure front panel should be closed after use to pretect the internal electrics that are sensitive to moisture.

Instructions

LIQUITRACK
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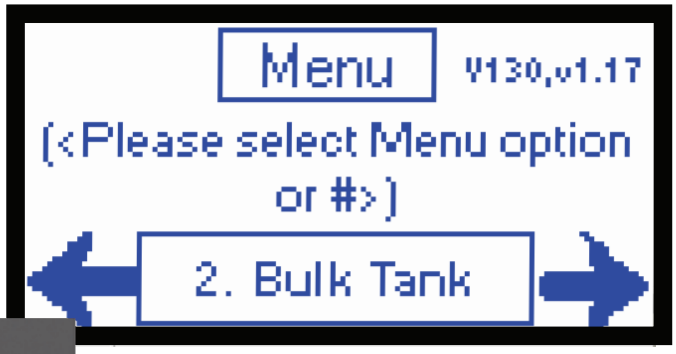
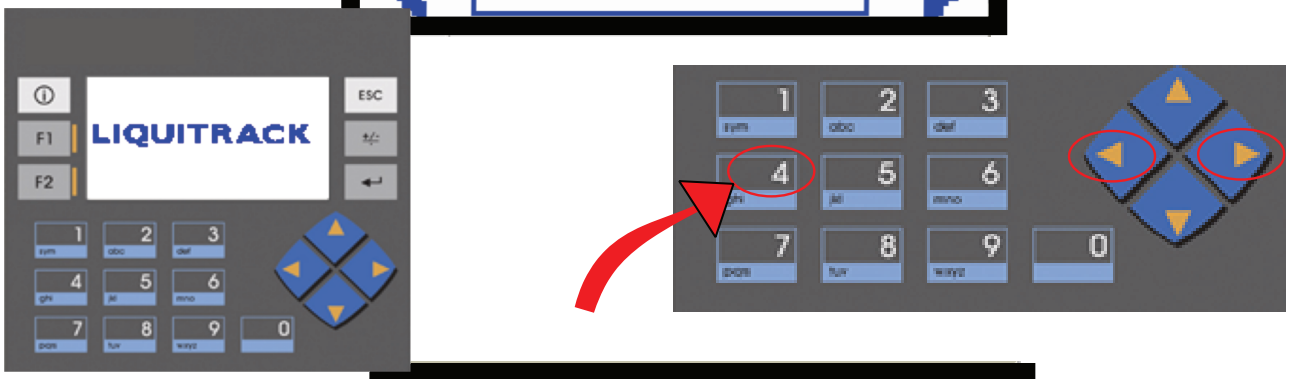
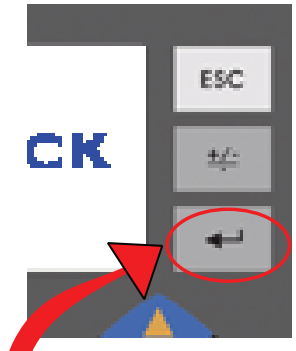
1. Dispensing



To dispence fuel, simply scroll through the menu or press the menu icon number desired eg [4 Dispencing] .



You will then need to scroll using the arrows to select your user preference. Ounce you have the correct user name displayed, press the [Enter Pin] button to proceed.



You will then need to enter your specific 4 digit pin number, and press the [Enter] key.

If the pin number entered is correct, you will proceed to the next screen. If the number is incorrect you will be provided a chance to enter the pin again. You may use the delete and clear buttons if an incorrect key is pressed.

NB. Use the Bs button to delete backwards .

When the correct pin is entered, your user name will be displayed.

You will then need to proceed to the next screen to select the specific vehicle by scrolling on the starter versions.

Tag recognised showing the vehicle name. Press [Enter] to proceed.

Systems with ibuttons will require the user, to press the ibutton into the ibutton socket for 1 secound. If the ibutton is recognised the name and tag number will be displayed.

If the ibutton tag is not recognised it may have been mis-read due to a hasty press and remove whereby the user should wait 5 secounds before trying again.

SYSTEMS WITH ACCOUNT ALLOCATION

Systems with Account allocation facility, will be asked to select the account to allocate fuel usage.

N.B It is advised that each driver has a small notebook in the vehicle to log vehicle odometer readings. This will assist with data input into the system when entering odometer readings.

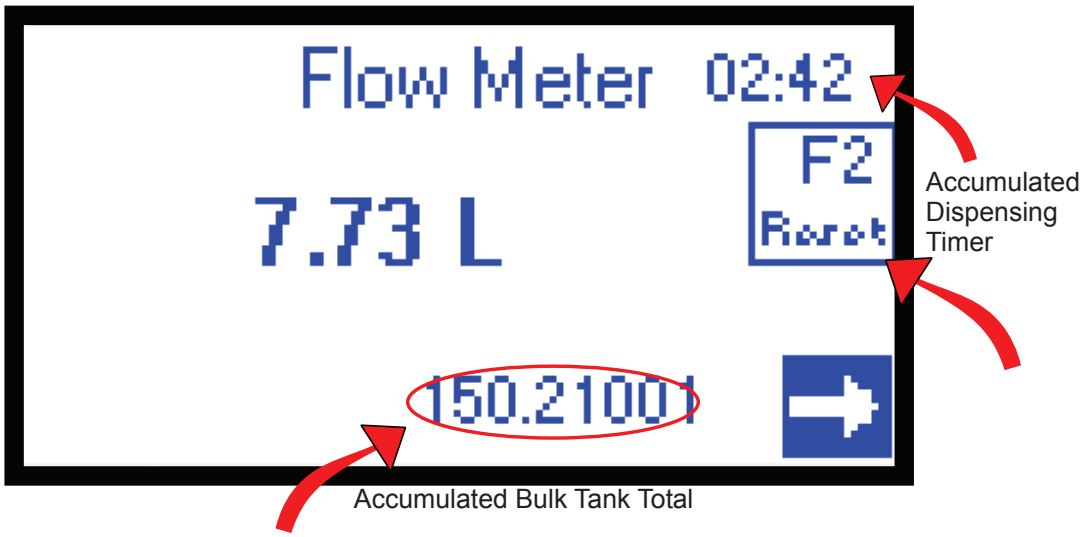
F1 is for Odometer Verification Overide for Administrative privaledge.

Ounce the vehicle is correctly recognised. You can enter the vehicle odometer/hour reading by pressing the blue press block. You can then enter the reading by using the provided keypad.

Press [Next] when complete.

The flow screen will then be shown. On the starter versions the pump will not start automatically and must be operated independently. Ounce the correct amount has been dispensed into the vehicles fuel tank it must be entered into the the input on screen.

Please note, that you only have **one opportunity** to enter this amount correctly, so please ensure that before you enter this amount, the amount is correct. This is for security reasons and will limit multiple entries being entered which will be added to the accumulated total.



F2 is used to reset the accumulated bulk tank total, circled.

ACCUMULATED TIMER
This figure represents an accumulated timer. The pumping operation must be completed in 3 minutes, otherwise the transaction will utomatically logged. This function is a safety function if the process is abandoned during the dispensing process. This timer will only activate if the flow rate is idle.

A of update 1.15, only certain authorised users will have authority to reset the accumulated total

Ounce , the pumping is complete, press the [Next] button to proceed to the confimation screen. All the information regarding the last transaction will be shown. This information must be confirmed to proceed further. The [Confimation] button must be pressed to log the data.

Ounce the data is logged you will be returned back to main menu.

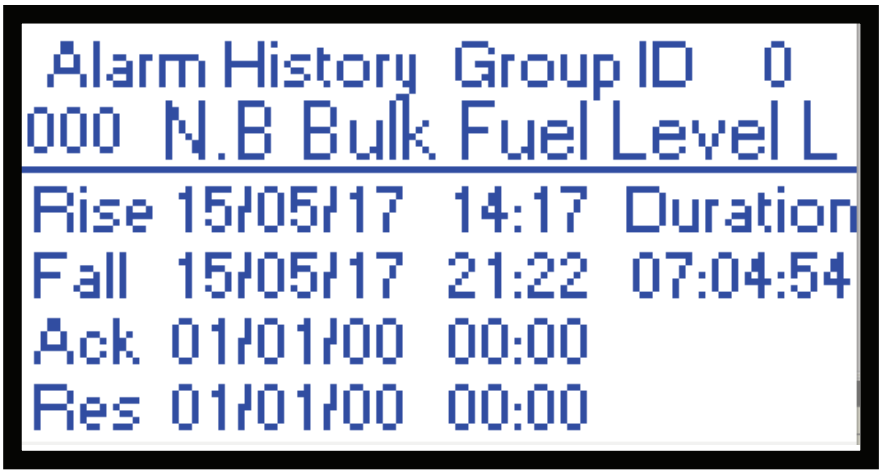
Again this screen will display for 1 minute before the transaction will automatically be logged.

If the information displayed is incorrect. It must be reported to the Administator. A Row Ref: will be provided.

Master/Slave Connection status

3. Alarms

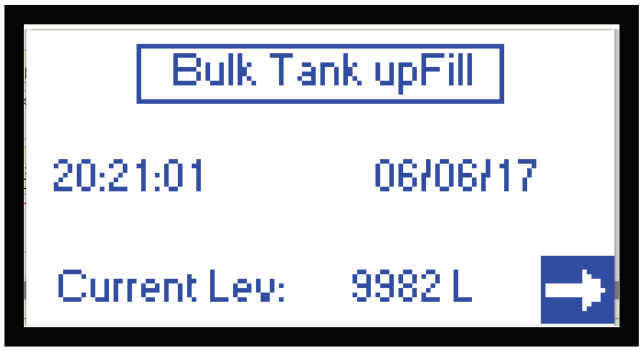
An alarm screen will be shown when an alarm trigger has been activated. To proceed to the previous screen, simply press the [ESC] button or press the [ENT] button to establish more detail. The [Alarm can also be acknowledged by pressing the [ENT] button.



5. Accumulated Bulk tank reset

The alarm history will remain in memory for upto 12 records. these records can also be viewed by proceeding to the [Alerts] icon on the main menu. The records can then be scrolled through by using keypad arrows.

4. Bulk Tank upload.

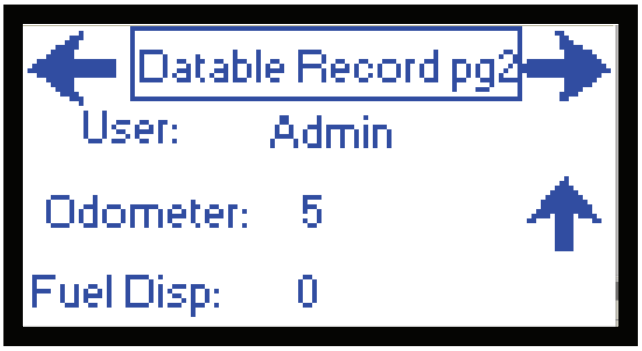


Authorisation levels can be set for this function.

To upload fuel into the system, press [Bulk tank upfill] button on the main menu. Enter the value of the fuel volume uploaded in the blue indented bar by touching. You can then enter the volume by using the keypad and pressing the [Enter] key. Ounce entered you may proceed by pressing the [Log] button.

The data will then be loaded into the datatable.

5. Reading Datatables



Use arrows to scroll between transactions.

To view previous transactions, press the [Datatable] button on the main menu. the blue arrows will allow you to scroll through the previous 120 transactions.

To view the bulk tank level, proceed to the [Bulk Tank] button on the main menu.

When the tank level reaches the Alarm set Point and alarm is triggered which will also trigger a email notice.

6. Bulk Tank View

Systems fitted with a level sensor will show the dip level in cm and the tank %.

Active Low Level alarm trigger level. Used to send an email alert.

6. Setting the time and Date

To change the date and time, select the [Date & Time] button.

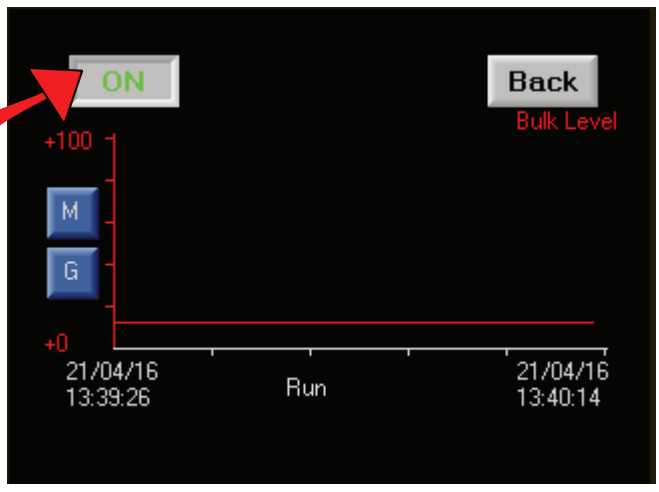
Enter the correct time using the on keppad and press the enter key and then {Next} to return back to the main menu.

7. Viewing vehicle tag numbers,names and fleet

To view the fleet name or serial number of the tag, press the [Vehicle tags] button. Use the blue arrows to scroll between vehicles. Press [ESC] to return back to the main menu.

8. Bulk Tank Trend over time ,(Trend Sensor)

Used to start trend monitoring.



9. Verification of Odometer/Hour meter input (Fuel Efficiency Application only)

To reduce errors in the input of odometer/hour readings for vehicles on the manual system, there is a verification process which compares the previous odometer/hour of the identified vehicle with that of the current inputed odometer/hour reading. If it is found to be less than the previous odometer/hour ,the value will be rejected and the system will request a correction. Values of zero will also be rejected. It will only be possible to proceed ounce an odometer/hour reading greater than the previous is entered.

10. Verification of Odometer/Hour meter Administative over-ride (Fuel Efficiency Application only)

This function is available to those persons with administrative privalages. Only persons with this privalage will be able to view the over-ride button. This will allow one to proceed to fill-up a vehicle when the previous odometer/hour reading was entered too high on error.

11. Network connection for Multiple Pump systems

Sites with multiple pumps must have a network connection to communicate information such as bulk tank fuel levels ,accumulated totals, users and vehicle identification data . This information is required to culculate live fuel efficiencies on vehicle fill-ups. To prevent loss of data a failed connection will prevent the user from using the system until such time as the connection is active again. The system will attempt to connect repeatedly 3 times. If this fails it will require the users attention. In the event of an emergency the user can change the system into a slave system permitting the user to continue but without a active connection.

12. System information

System information can be viewed by navigating to the [Coms] icon on the main menu.

ADMINISTRATIVE FUNCTIONS

Select this function from the main menu.

The User will be asked for his user PIN to determine if that user has Administrative permissions. This administrative menu has a security lockout timer in case an Administrator leaves a function on the screen without exiting. This will mean all functions should be completed within 10 minutes.
These functions can only be performed by a user that allready has Administrative permissions.

1. BULK TANK UPFILL
2. MANUAL DATA INPUT (For inputting data for fixed assets, eg generaters)
3. ADD/CHANGE VEHICLES
4. ADD/CHANGE USER
5. SETUP (Initial setup of site settings)
6. RESET ACCUMULATED BULK TANK TOTAL
7. ADD?CHANGE ACCOUNTS
8. SAVE TO SDCARD

4. ADD /CHANGE USER

The current system can hold up to 40 users. To add a new user it is recommended to ovewrite an existing user if another user no longer operates on the system. This is to avoid a growing list of non-functional users. In the case where an additional user needs to be added and there is no reason to overwrite another user then it is important to add a new row to add the the new user. To delete a user will be the same as to overwrite a user that is no longer used. Liquitrack can also add/deduct users for a small fee.

Please note that the system rows start at row 0, so the number of rows will always be including row 0

Ounce you have been authorised to proceed by entering your name and PIN

You will be required to enter the number of users required on the system. The system will reflect the current number. Only change this number if there are no other users to overwrite or change.

Press Enter to change or right arrow to proceed.

If you are not changing the user information and you cannot overwrite a user all ready registered on the system then add 1 to the existing number. eg (n+1) This will provide a empty row to add a new user.

Ounce you have selected the number of users, you will able to view the user details and the corresponding row number.

Ounce you know the user and row number you wish to change press the right arrow key to proceed.

Use of Keypad
Use the up/down arrows to change case
Press the specified key repeatedly to show letter required. (in quick succession)
eg. to get letter lowercase o, press down arrow if in upper case followed by pressing the key 3 rimes.

Press the Enter key to edit the data or add data and use the up, down arrows to navigate between the input tabs. Ounce the information shown is correct, Press <F1> key to save the data to the specified row number.

The PIN number and user Authority can be changed. To change the user Authority use the <F2> key to toggle the permission.

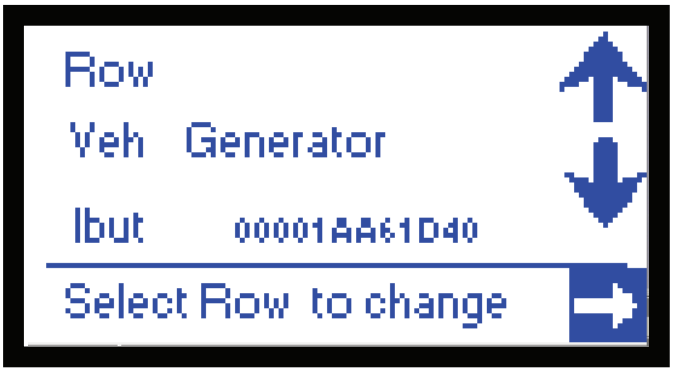
3. ADD /CHANGE VEHICLES

Please note that the system rows start at row 0, so the number of rows will always be including row 0

Ounce you have been authorised to proceed by entering your name and PIN

You will be required to enter the number of vehicles required on the system. The system will reflect the current number. Only change this number if there are no other vehicles to overwrite or change.

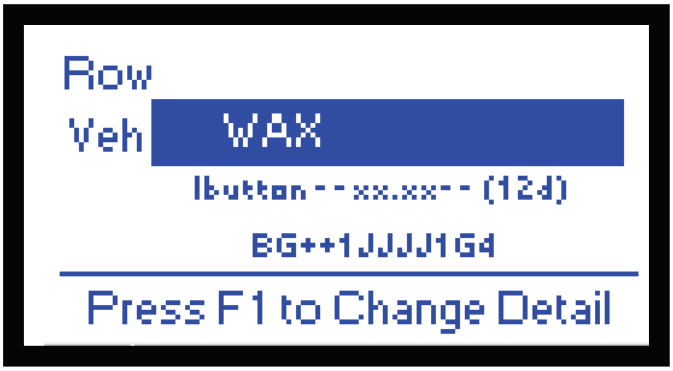
Press Enter to change or right arrow to proceed.



If you are not changing the vehicle information and you cannot overwrite a vehicle all ready registered on the system then add 1 to the existing number. eg (n+1) This will provide a empty row to add a new user.

Ounce you have selected the number of vehicles, you will able to view the vehicle details and the corresponding row number.

Ounce you know the vehicle and row number you wish to change press the right arrow key to proceed.



Press the Enter key to edit the data or add data and use the up, down arrows to navigate between the input tabs. Ounce the information shown is correct, Press <F1> key to save the data to the specified row number.

The ibutton number can also be edited or changed. PLEASE ONLY ENTER THE 12 DIGIT SERIAL NUMBER on the ibutton.
eg _ _ xxxxxxxxxxx _ _

7. ADD /CHANGE ACCOUNTS

Please note that the system rows start at row 0, so the number of rows will always be including row 0

Ounce you have been authorised to proceed by entering your name and PIN

You will be required to enter the number of accounts required on the system. The system will reflect the current number. Only change this number if there are no other accounts to overwrite or change.

Press Enter to change or right arrow to proceed.

If you are not changing the account information and you cannot overwrite an account all ready registered on the system then add 1 to the existing number. eg (n+1) This will provide a empty row to add a new user.

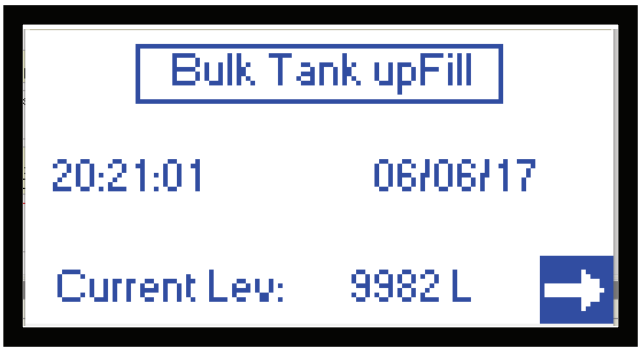
Ounce you have selected the number of accounts, you will able to view the account details and the corresponding row number.

Ounce you know the account and row number you wish to change press the right arrow key to proceed.

Press the Enter key to edit the data or add data and use the up, down arrows to navigate between the input tabs. Ounce the information shown is correct, Press <F1> key to save the data to the specified row number.

The account category can also be edited or changed, to represent the type of activity for fuel rebate and SARS purposes as either Business or Private.

1. Bulk Tank upload v2.



Authorisation permissions can be set for this function (see Administrative permissions.)

To upload fuel into the system, press [Bulk tank upfill] button on the main menu. Enter the value of the fuel volume uploaded in the blue indented bar by touching. You can then enter the volume by using the keypad and pressing the [Enter] key. Ounce entered you may proceed by pressing the [Log] button.

The data will then be loaded into the datatable.

By pressing <2> you will have the option of adding an upload or delivery refernce number for accounting purposes which will reflect on the daily report.

Example of report with upfill refernce number, shown as UPFILL--(7 digit alphanumeric string)

15/01/19	09:42:27	11620622	UPFILL--1259725	Rude Muller	4205.46	4405.46	0

2. Manual data input,

Manual data input, will provide the user with a similar dispensing process as in section 1, however the fuel input usage can be entered manually for assets that feed from the bulk tank via an alternative system. (Administrative permission required)

5. Setup (ONLY FOR INITIAL SITE SETUP)

This facility will provide the user to change site settings such the
1. the maximum volume of the bulk tank
2. the connectivity status of the system model , Slave/ Master
3. Encoder Direction state.
4. Flow meter calibration, Pulses per Litre (see manufactureres specification)
5. Bulk Tank opening/current balance
6. Pump shut off (idle) timer set. This is the idle time before the pump will automatically switch off if left unattended. Warning, long timer settings may damage the pump.

Setup the Maximum Bulk tank Volume.

Select the time duration from when pump is active to when the time will shut down after zero flow detected.

Select the mode in which the system operates. all single units will be slaves. Multiple units will either be a master or slave.

Select the quantity of pulses per litre for the respective flow meter,
(Updated to Show
Pulses Per Deci Litre) This is to provide more accurate whole number linearisation.

and the respective opening balance for the bulk tank.

6. Reset Accumulative Bulk Tank Total.
This function is the same as that which can be used via the dispencing process on the flow screen. This function however can be used for convience if the administrator wishes to reset the accumulated total without having to proceed with the dispencing process.

8. SAVE LAST 120 RECORDS TO SDCARD.

Liquitrack can supply preformatted sDcards or,
OS versions 2.23 and higher support SDHC (SD High Capacity) cards.
Use fast SD cards from a reputable manufacturer with a capacity of at least 1G.
The PLC supports SD cards with a single partition, which may be equal to the capacity of the card.

Before you begin: SD Card Suite
First, you must install the SD Card Suite supplied by Liquitrack . The Suite contains the SD Card Manager and utilities you must have to work with an SD card.
Before you insert the SD card into the PLC, you must connect the card to your PC and format it according to the instructions in the SD Card Manager. This formatter embeds the necessary framework, creating a folder structure on the SD card; when the application writes data to the SD, it will write it to the appropriate folder.

To insert the card, slide it into the slot and lightly press it until it clicks into place. This click engages the spring that holds the card. To remove the card, press it lightly and release; the spring pops the card up.

The SD Card Suite contains several applications that you need to work with SD cards:

Tools
Includes the Card Formatter (note that a card must be formatted before use),

SD Card Explorer
Use a PC to access, read and write files on an SD Card that is installed in a controller

SD Card Manager
Import SD files: Trends, Logs, Alarms, and Data Tables, view them, and export them to Excel or .csv files.

Data Tables Editor
View, export, and edit Data Table files.

To Format the SDCard with the correct File Structure.
(Please note the PLC will not read or write to the SDCard if it does not comply with the file structure specified.
This is why the SD Card Suite must be used to format the SDCard and not the standard format systems.

To format the card:

Place the card in an SD card reader and plug the reader into a computer's USB port.

Open SD Tools and select SD Card Format.

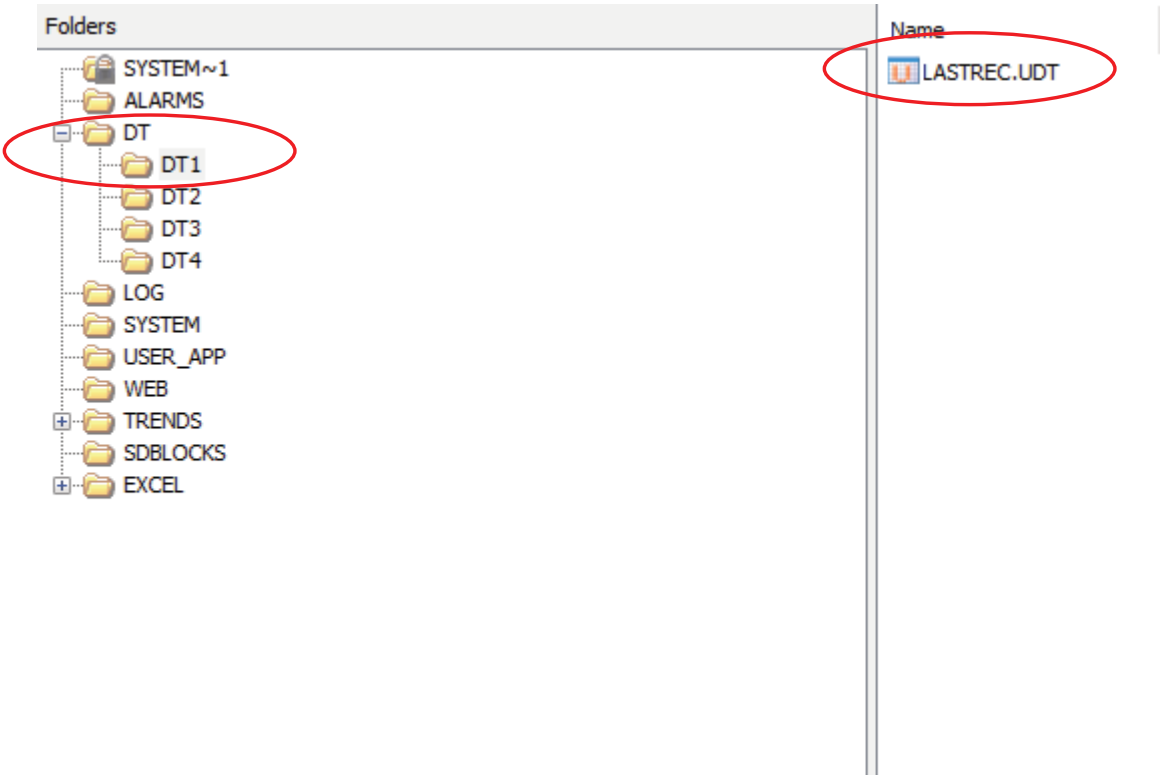
Select the drive that holds the SD card. Enter a name for the card, and then click Start.

The SD Card Formatter displays a message, warning you that the process erases all card data; click OK to begin the formatting process.When it is complete, the application shows the File System as FAT 32, and shows the total capacity and the amount of free space on the card.

View the card in Windows Explorer. The Formatter creates a directory structure which the PLC uses to write files to the SC card

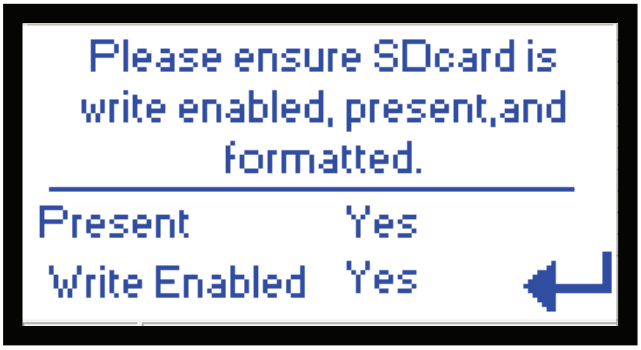
The SD card is now ready to insert into the PLC.To insert the SD card into the PLC, locate the SD card slot on the controller side.

Location of saved file under the directory DT1 with file name LASTREC.UDT

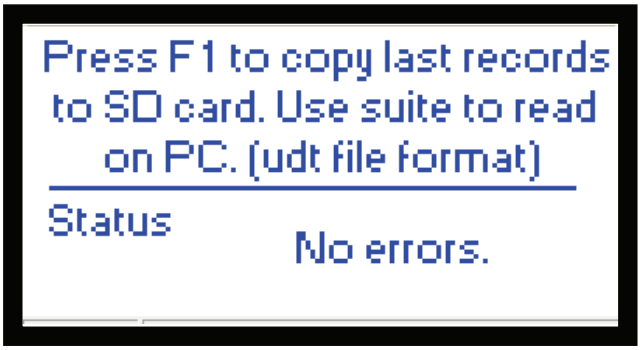


SAVING TO SDCARD PROCESS

Use the Administrative menu to save a file to the SDCard. Please see SDCard requirements above.



Please ensure the SDCard is correctly formatted and is write enabled. If the card is not inserted or formatted or not write enabled you will not be able to proceed.



Press F1 to start the process of coping the last 120 records onto the SDCard under the file LastRec.udt

The file is saved in the DT1 folder with the name LastRec.udt . The file is in a format that needs to be converted to a Microsoft excel format or .csv. Please use the SDCard suite to convert the file to the format you wish to use on the PC.

changes v2.0.9beta
1. delay timer before pump switch on off to avoid flow meter residual spin after shut off triggering unauthorised dispencing.
2. Datatable view last record as apposed to to last view.
3. Administrative Menu and setup function. with Lockout timer if left on screen.
4. Additional row in datatables for view referncing.
5. Change of dispencing keys on keypad
6. Invoice reference function on bulk tank upfill.
7. Accumulative bulk tank total option on Administrative screen
8. Added Account Facility.
9. Added Save to SDCard

10-4-19 GCNorris