

Pump Run Schedule is showing incorrect time to next pump run

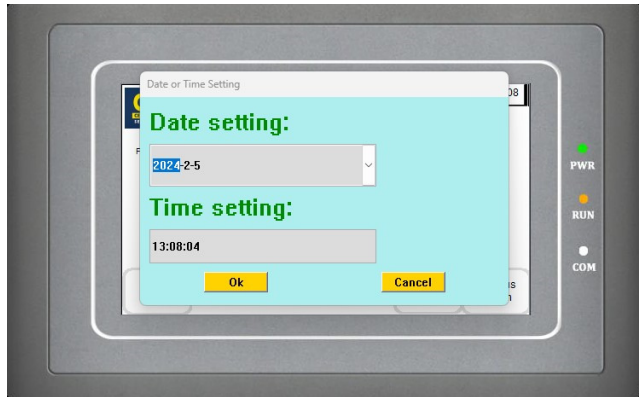
Possible recent power interruption—cycle the power to the unit, then view the pump run schedule and advance the Schedule until **AFTER** the current time and ensure the unit automatically starts again.

Time and / or Date is shown incorrectly on the screen

Enter “Engineer” menu

Click on the Time/Date at the top right of the screen

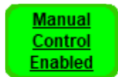
Adjust as required



How to run the system manually to re-prime or check for any leaks

Enter the “Engineer” menu

Click “Manual Control” button (which turns green)



Return to main screen

Now **PRESS**  to run the pump and then press  once finished

Remember to log out of the “Engineer “menu and Advance the Schedule.

Fuel Conditioning Unit



Complete with 2 micron & 10 micron filtration for particle and water removal, and a magnetic fuel conditioner and control electronics.

WARNINGS



- Unit is not designed for pumping any fluid other than EN standard diesel fuel or HVO/GTL fuel.
- Do not site the unit adjacent to a petrol dispenser or hazardous zone.
- The installation of the unit including the electrical connections must conform to all relevant electrical and local authority regulations and standards.
- The unit should be installed in a well ventilated area, and all cabinets should be ventilated, and the tank designed to accept a fuel conditioning system.
- If the unit is fitted to an above ground tank, please make sure that there is a check valve fitted with the correct spring ratio and pressure relief to suit the tank height. Max suction pressure = -0.3bar, Max delivery pressure = +2.1bar. If in doubt install pressure gauges as per the pump installation manual.
- Unit installation must be performed by a competent fuel installation engineer.
- Make sure there are no warning messages on the front panel or fuel leaks after commissioning.
- Ensure that all relevant staff are trained on the operation of the unit, as part of your fuel installation risk assessment.
- The unit has been pressure tested and function tested after assembly and we recommend the use of union fittings to ensure that the sealed joints are not damaged by installation pipework.
- Fluctuating electrical parameters and fuel additives will reduce the life of the pump. Do not configure the system for cycles greater than 30mins.

Wiring and functions are proprietary information of Centre Tank Services Ltd

TROUBLESHOOTING & FAQ

FILTER BLOCKED Alarm comes on whilst the pump is still programmed to run

- Could be taking too long to prime once the pump starts – try changing the flow delay settings.
- Ensure the fuel pickup is far enough away from the fuel delivery (suction should be close to the pump and delivery should be to far side of the tank) as there is now air entering the system Try to shorten the time that the pump runs for.
- Check the filters... they are probably blocked.
- Check that the minimum pipe dimension of 1" I/D pipe is being used.
- Check the supply voltage is within tolerance—if not reduce the pump run time.
- Check the pump switch is in the ON position.
- Check for the RED Led inside the control box to activate the pump relay.
- Is there enough fuel in the tank ?

FILTER BLOCKED Alarm comes on after the system has only run a few cycles

- Likely that the filters are actually blocked! Check the alarm log to verify if the degraded filters were registered.
- If the fuel has never been filtered before the recirc unit is fitted then the filters will block quickly and are doing their job. Change filters and run unit again.
- Ideally the fuel should be polished before the recirc unit is used... or fresh fuel should be in the tank when the recirc unit is fitted.
- Check to see that the min pipe dimension of 1" I/D pipe is being used.

SERVICING

Periodic inspection and changing of the filter media as required. Large tanks should have filter media changed regularly. On annual inspection the following should be changed:

- 2 x filter canister media & canister seals
- Vanes and cover o-ring for pump
- Clean pump inlet filter and any other suction strainers
- Confirm pump is operating to declared electrical specification
- Depending upon tank construction it may be necessary to check and clean the magnetic conditioner.
- Consider changing the pump when unit exceeds 1.5m litres.
- Consider changing the relay pack and PSU after 5 yrs

SPARE PARTS

CTH1851—Cim-Tek Hydroglass Bio Water Filter Element 2 Micron 70037

R14862—Cim-Tek Hydroglass Bio Water Filter Element 10 micron 70024

R112760000—Vane kit for Panther pump.

R11461000—Front cover plate o-ring.

SWS1035—Float sensor probe for drip tray/leak.

OPTIONS

F0075510D—230v Piusi OCIO gauge for tank reading and low level alert.

SWS2010—3 compartment mains alarm with probes for tank

All parts are RTB warranty and any replacements do not extend the overall warranty period.

Refer to our T&C's for further information.

SPECIFICATION

- Fuel Conditioning unit to improve stored fuel quality for up to 40k litre tanks
- Multi Pass ISO cleanliness target of 14/13/11 and <60ppm water (lab tested)
- High quality **PIUSI** pumping and metering products.
- CIM-TEK **ULTIMATE DEFENSE** 10micron and 2micron Hydroglass® media spin on canisters.
- For the conditioning of 1.5x storage tank capacity over 21 days—working Monday to Friday 9am to 5pm
- IP55 protected electronics & pump, installed on a rear back plate for easy mounting to a tank.
- Magnetic fuel conditioner for breaking down bacteria molecules and double stage water and particle filtration.
- Custom PLC control panel with touch screen indicating operational messages.
- Customisable tank size, run time and degraded set points.
- Pulse meter controlled filter degradation and trending visualisation.
- The internal timer that controls the pre-set time periods that the fuel is circulated, is determined by a pre-set tank volume.
- Mushroom style stop button on the plate to allow the immediate stop of pump functions by anyone.
- In the event of the filters blocking, the screen will display the corresponding message and the pump will switch off until the filter is replaced.
- Leak sensor input—for connecting to the drip tray fitted below the pumping unit.
- Low Fuel Level input for connection to a relay output on a tank gauge or tank alarm system.

- Non Latching Input for Low Level / Leak (N/O); for connecting a tank alarm or electronic gauge to detect a low fuel level. Activates the warning on the control panel and turns off the pump, Leak sensor is included and must be installed in a drip tray below the unit.
- Two passive BMS outputs for remote warning of filter block and low level/leak to alert the user that they need to take action. Low Level and Leak are a shared output

Models Available :

CTS1080 - For circulating (50lpm) max 3000 litres per day (40,000l tank)

ELECTRICAL CONNECTIONS

Your unit will be already pre-wired with a 2000mm fly-lead. Replace or use conduit if this is not suitable for your installation assessment.

Please wire this through a suitable RCD protected, local double pole switch disconnector fed from a 6A motor rated breaker (C), with a stable 230v 50Hz supply.

(+/-5% tolerance on voltage)

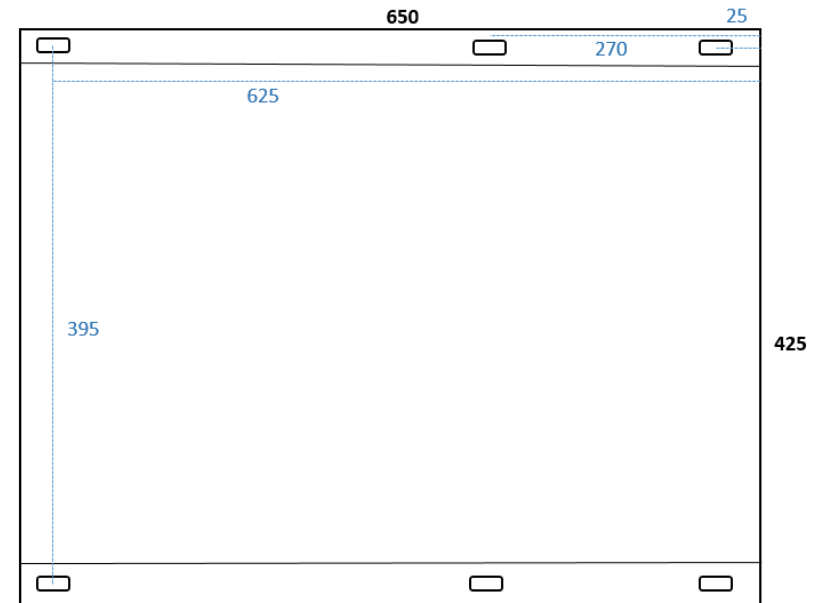
INPUTS & OUTPUTS

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
E-STOP	E-STOP	PUMP	PUMP	PUMP	BMS	BMS	BMS	BMS	LOW	LOW	LEAK	LEAK	PULS	PULS
			N	⏏	LOW LEAK	LOW LEAK	FILTER	FILTER	IN	IN	IN	IN	IN	IN
									+	-	+	-		

We recommend terminating the wires in a ferrule before connecting to the terminal block to ensure a positive reliable connection.

DIMENSIONS

Fig 1



* All sizes are in mm and approximate

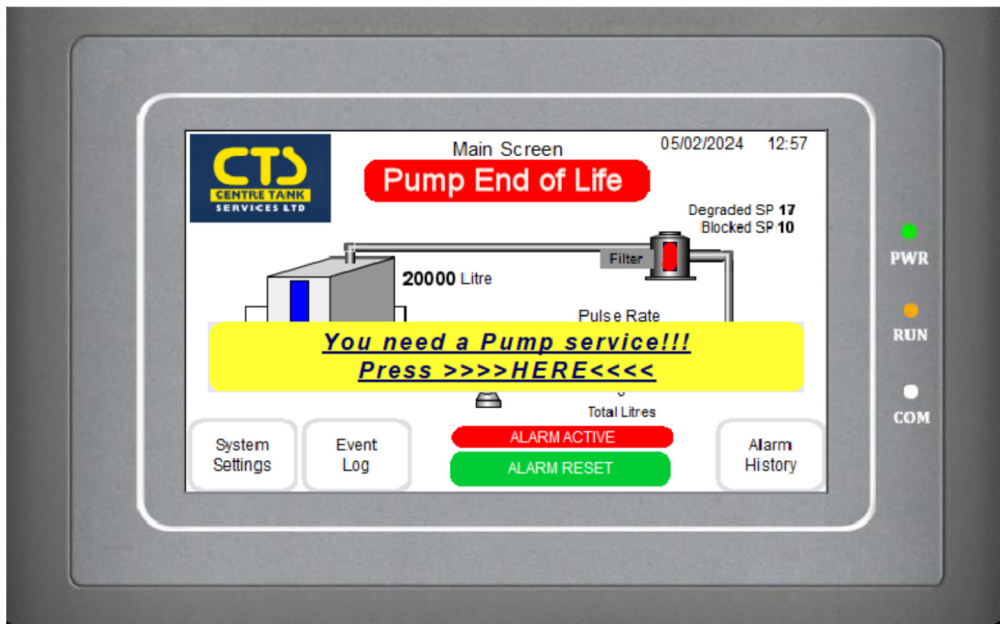
Max width of unit with elbows is 760 mm

Max depth of unit is 220mm

Max height with filters closed is 760 mm

Recommended installation area requirements 800 mm wide x 900 mm high

PUMP END OF LIFE



We suggest changing the pump after 1.5million litres processed through the system.

The above message will appear and write the alarm information to the log. Once cleared, the message will re-appear upon a power cycle.



A new pump can be ordered directly from QR code, or from the advertised contact.

INSTALLATION

- Ensure all pipework that is to be connected is free of any weld debris / excessive sealant, minimum dimensions of 1" pipework with a max tank height of 2.8m. Suction pipe to be as short as possible and delivery pipe to return to opposite side of tank to gain a cyclic effect. Non Return Valve must be installed on suction line inc wire strainer.

Max suction pressure = -0.3bar, Max delivery pressure = +2.1bar. If in doubt install pressure gauges as per the pump installation manual.

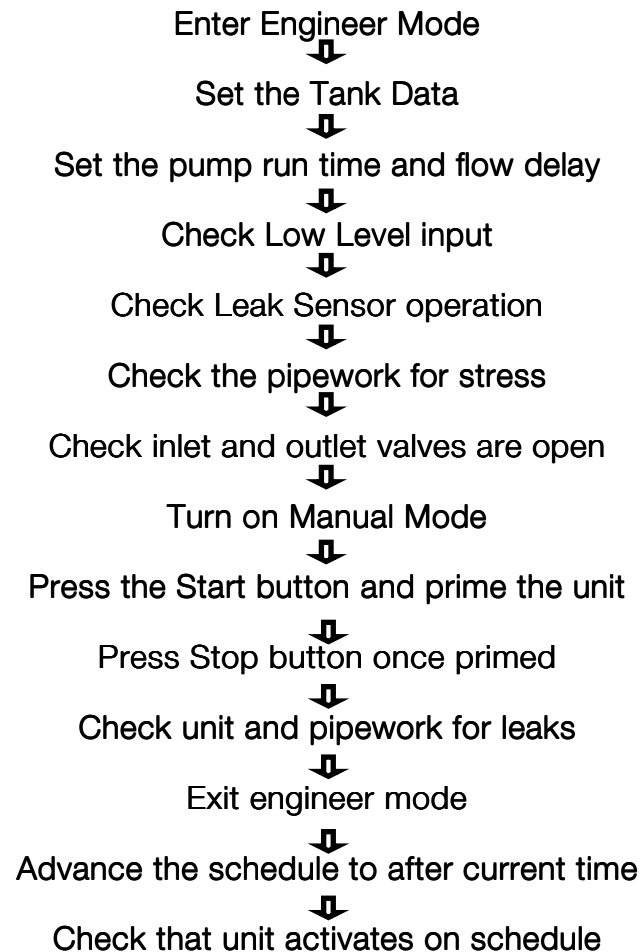
- Mount the rear plate to the tank or wall with sufficient fixings. (See fig 1 – Page 21)
- Connections to the inlet and outlet can be via flexible couplings and union fittings. Flexible coupling must be inspected regularly.
- We supply a ball valve for the suction inlet and delivery outlet. These are to be fitted by the installer / fabricator at a point deemed appropriate to the installation to allow simple filter changes.
- If fitted outdoors ensure a rain & sun deflector is installed above the unit.
- Remove the bottom panel to reveal the input terminals—diagram on reverse of panel.
- Ensure the connection pipework is not stressed when connected.
- Use all the plate fixings points where available.
- Ensure the unit can be serviced easily once fitted

IMPORTANT!

Please note: You must use the leak probe. Create a containment system or drip tray under the unit to aid in filter changing and detection of leaks. If the unit leaks then the system will shut off to prevent the tank emptying. If outdoors—ensure rain / sun shield covers and prevents rain in drip tray.

QUICK START

Hydraulic and Electrical connections must be in place



CHANGING BLOCKED OR DEGRADED FILTER

The unit is fitted with a pulse meter that detects when either of the canister filters are blocked. Upon detection, the PLC will stop the unit, and trigger a passive output to a BMS (if set up). The pump will not reactivate until the blocked filter has been replaced and / or the active alarm reset.

1. **IMPORTANT:** Press the **STOP** button on the plated unit to ensure the pump is isolated from power whilst maintenance is carried out.
2. Turn the lever ball valves off at the fuel inlet and outlet to prevent fuel loss.
3. Unscrew each canister using a filter strap and drain any excess fuel.
4. Inspect the filter head seat and wipe clean
5. Add the new rubber canister seal carefully and lubricate with some oil.
6. Refit each canister and tighten with a strap ensure that the filter gasket remains in the groove on the head.
7. Open the lever ball valve on the fuel inlet and outlet
8. Reset the isolator, Either wait for the next cycle, or enter the engineer menu and put the system in to manual mode to re-prime the canisters.
9. If no flow is detected the pump will switch off again, if this happens repeat step 8 and check valves are in the open position and check valve is not stuck.
10. Dispose of used filters as contaminated waste following onsite guidelines.

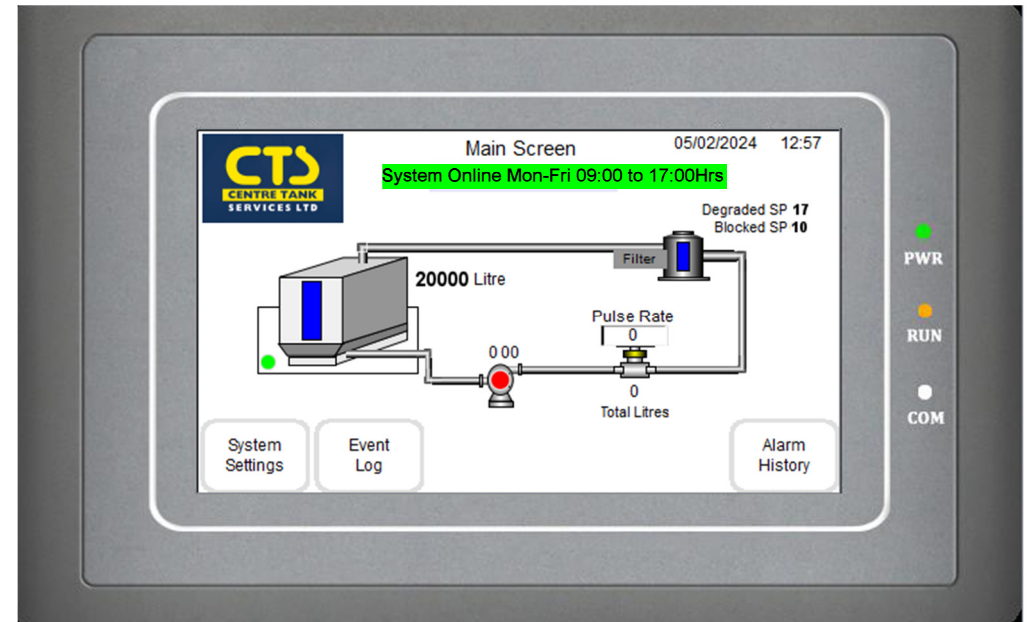
RE-ORDER FILTERS



The end user has the option to re-order the new filter canisters from either the QR code or by calling the advertised contact.

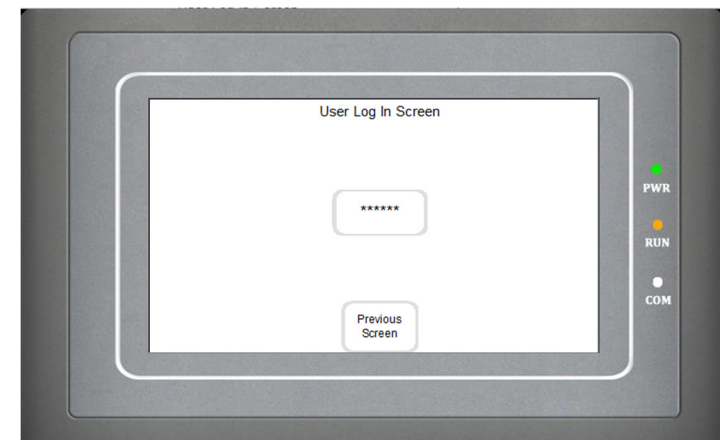
- CTH1851 - Cim-Tek Hydroglass® Bio Water Filter Element 2 Micron 70037
- R14862 - Cim-Tek Hydroglass® Bio Water Filter Element 10 micron 70024

INITIAL CONFIGURATION

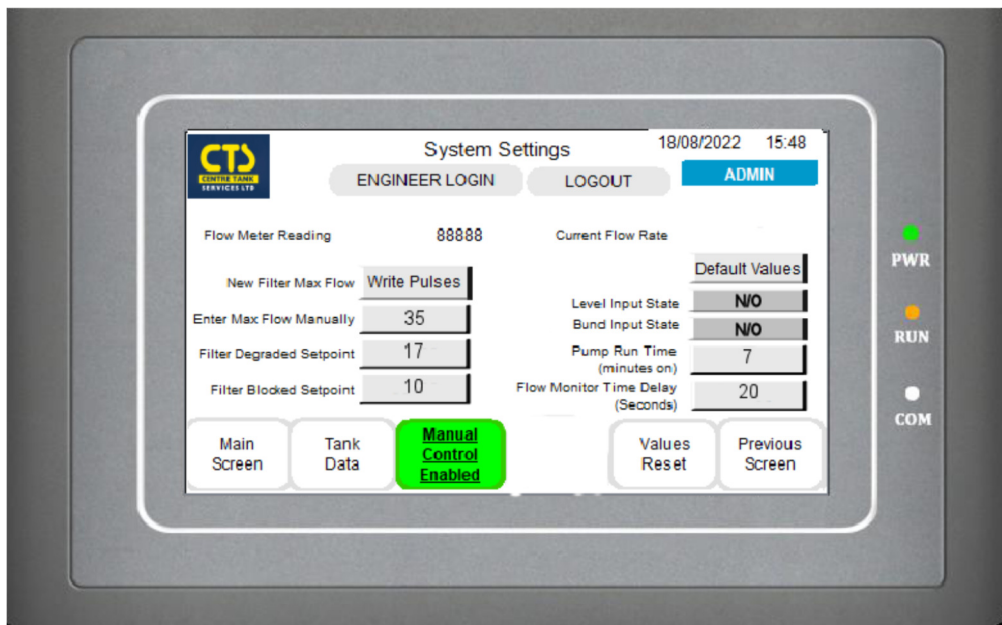


The default screen will display the factory pre-set information.

PRESS "System Settings" Button, then **PRESS** "Engineer Login Menu"



ENTER PIN Number **** (Supplier of Equipment will have this)



The set-point information has been pre-configured to suit the Panther 56 pump that is installed on the unit and to ensure the pump does not run outside of its working pressure curve.

The pump run time can be configured by the engineer based upon the TANK DATA screen recommendations or adjusted to give a custom run parameter.

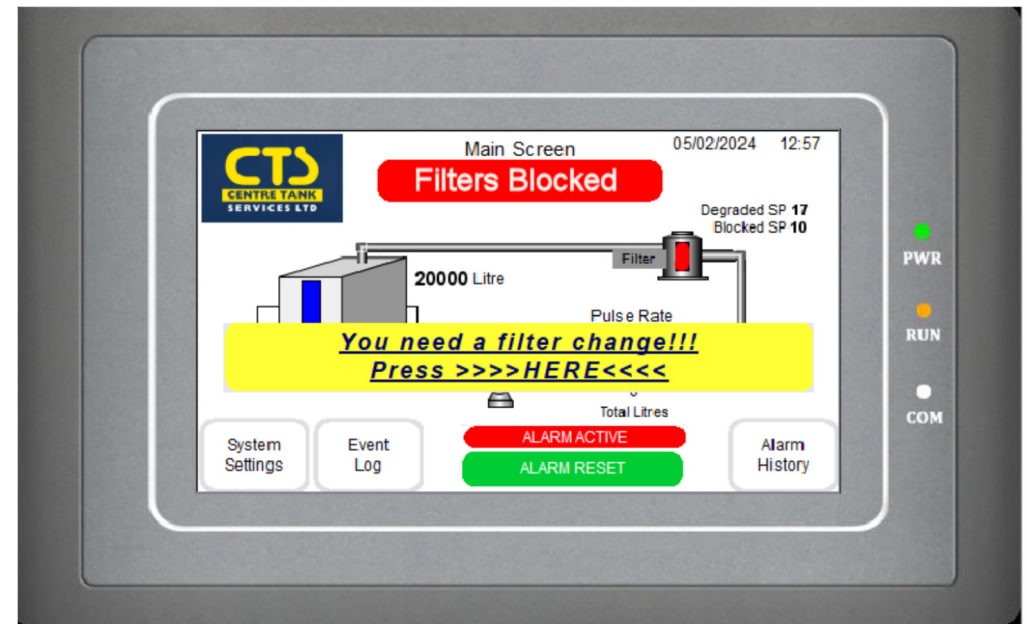
The flow delay is configured here to allow for larger installations that could potentially loose prime—acts like a self priming timer to ignore the flow until its stabilised after starting a cycle.

The Input logic is fixed at Normally Open

The Output logic is Normally Open but an engineer could change the connections on the relay board to give Normally Closed output —depending upon the BMS input requirements.

PRESS “Tank Data” Button

BLOCKED FILTERS



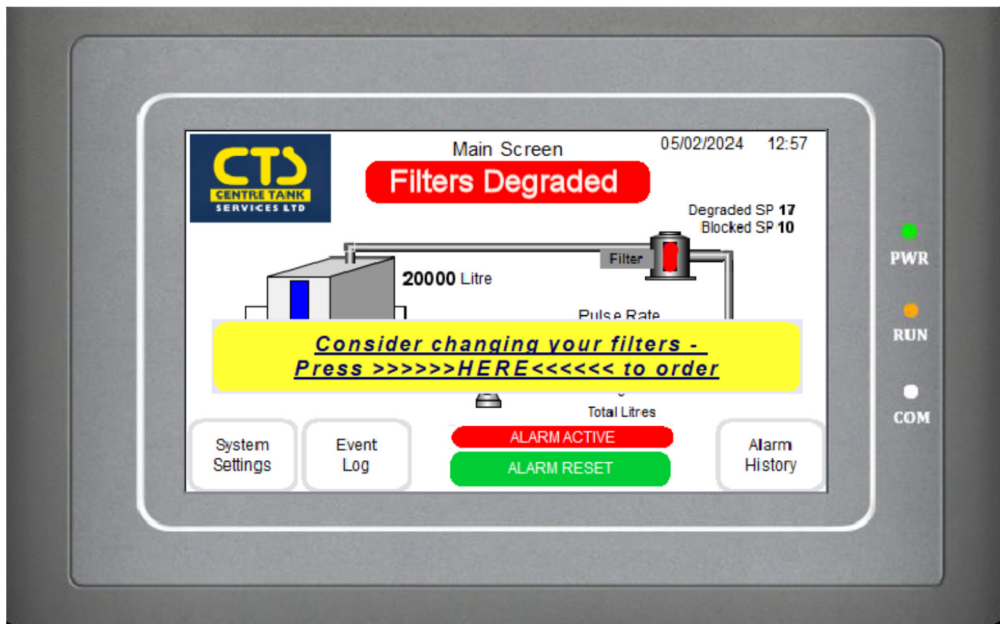
The end user has the option to re-order the new filter canisters from either the QR code or by calling the manufacturer.

- CTH1851 - Cim-Tek Hydroglass® Bio Water Filter Element 2 Micron 70037
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The pump will **STOP** on the Filter Block Alarm and not start again until the filters have been changed and the **ALARM RESET**.

There is 1 x volt free contact for connection to a BMS or other external equipment that activates on the Filter Block Alarm.

DEGRADED FILTERS



When the filters start to reach the end of their useful life the unit will provide a visual alert on the screen during the current running cycle.

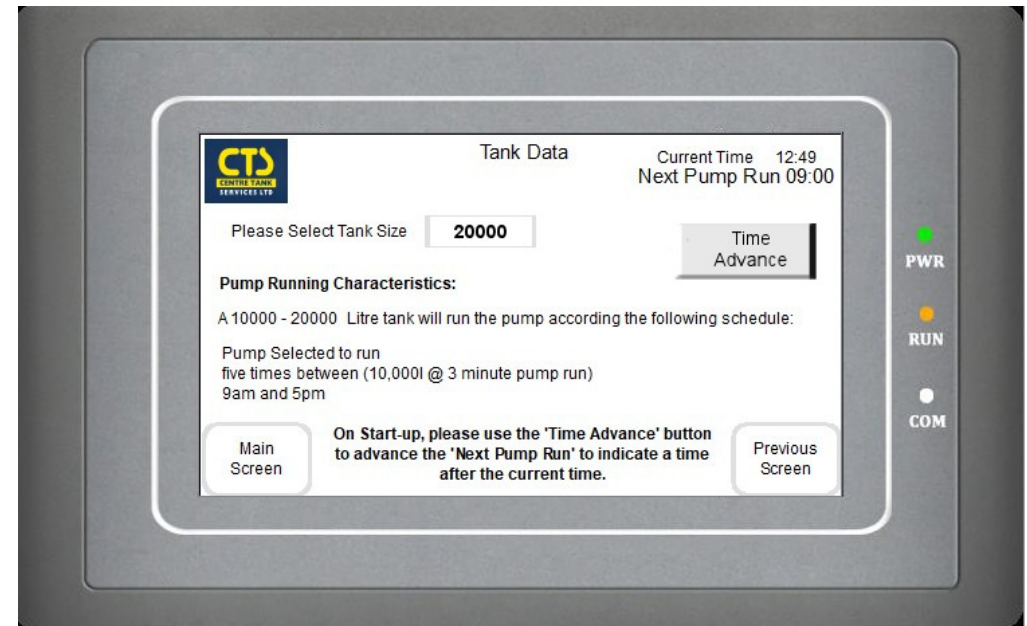
The operator has the option to **RESET** this alarm during the running cycle and see if it re-appears.

The Degraded Filter Alert is logged to the Alarm History Log

This feature allows the customer to re-order new filters by CLICKING on the alert box, the unit will continue to run allowing the new filters to be delivered.

IMPORTANT!

Any servicing engineer will have the degraded filter information in the Alarm History and can choose to change them pre-emptively instead of having to re-visit as the filter life is unknown on other systems.



PRESS “Tank Size” Field

Enter the tank size required

Information and suggested run times will be given and preconfigured for a range of tank sizes to ensure 1.5 x the tank size is being conditioned every month based on Mon—Fri 9am to 5pm.

PRESS “Time Advance” button until the Next Pump Run is after the current time

Example :- 20,000l tank size selected = 50 lpm x 7mins run = 350 litres per run

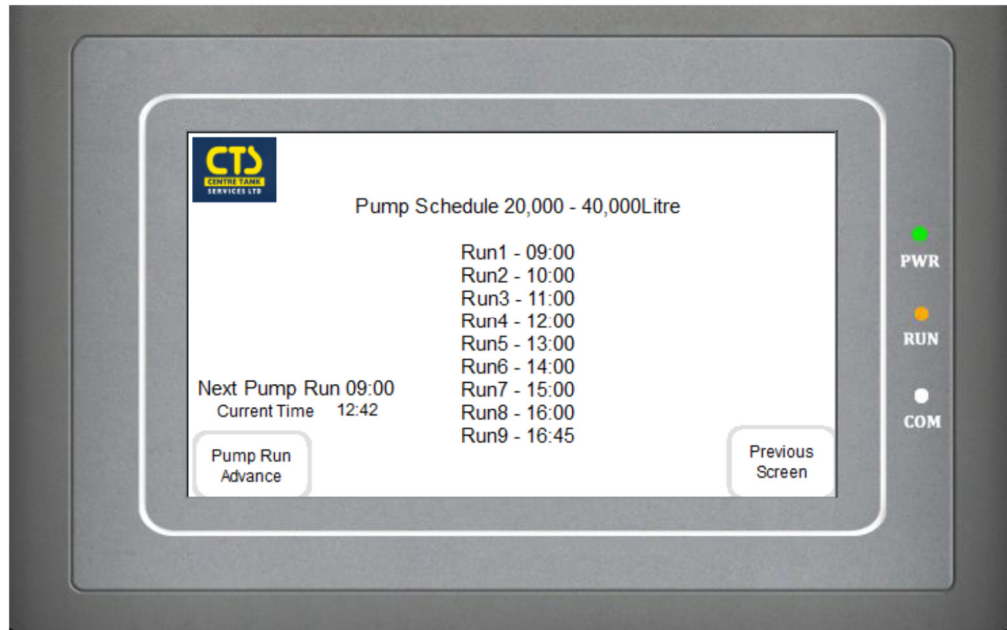
350 x 5 runs in one day then multiply by 21 days = 36,750 per month

Note—If you want to run a SUPER CLEAN on a smaller tank then set the tank size to 40,000l and set the pump run time to 10 mins. You will now condition approx 4,500l per day or 94,500l per month—but be aware you will reach the pump service life quicker,....and require a pump & filter change earlier than expected.

PRESS “Logout” on System Settings screen

RUN SCHEDULE INFORMATION

PRESS "View Schedule" Button on Main Screen



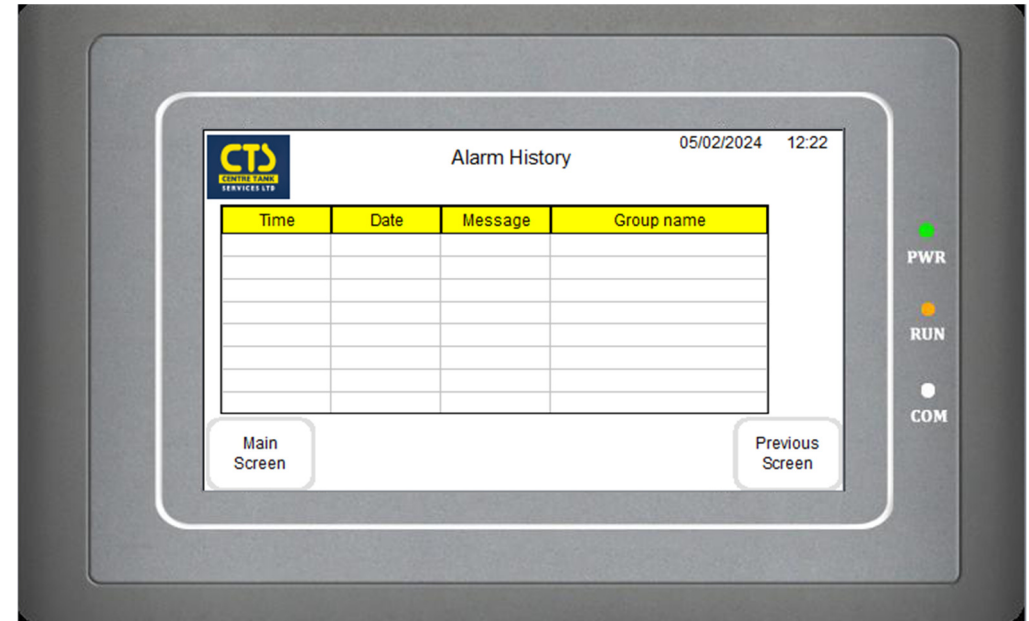
The schedule displayed is based upon the tank data selected.

On initial commissioning or after testing **PRESS** "Pump Run Advance" button to set the next pump run on the schedule correlating to the current time.

***Note**—after an interruption to the mains power OR after the resetting of ANY alarm the screen will display the last run cycle completed. Click **PUMP RUN ADVANCE** button multiple times to match the next pump run to the current time.*

The PLC will still run the pump on the schedule set, but for any instantaneous viewing then the schedule can look out of sync.

ALARM LOGGING



Alarms are registered in the alarm logging section.

This section details important historical alarm information that can be viewed from the home screen by anyone.

Alarms Reported will be in the full time format HH:MM:SS :-

Filters Degraded

Filters Blocked

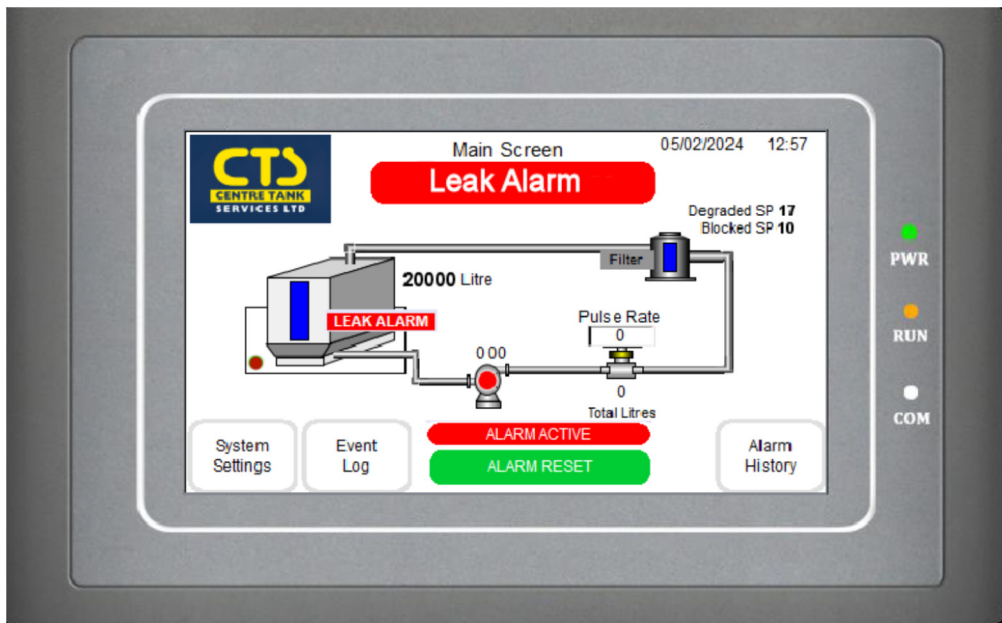
Leak Alarm

Low Fuel Level

No Max Flow Set

No Flow Delay Set

LEAK ALARM



If the leak alarm sensor activates then the unit will stop operation.

This is to prevent emptying of the tank if the unit or attached pipework develops a leak and will prevent the unit from continuing to operate.

Manual user intervention is required to **RESET** the alarm after the leak has been solved, before the unit will resume automatic operation.

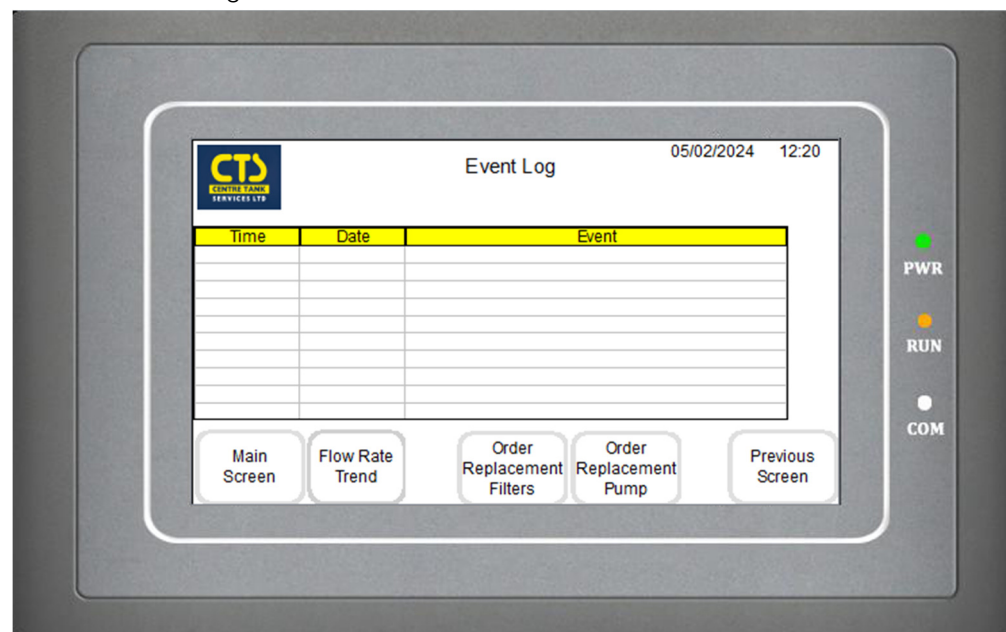
PRESS "Alarm Reset" button

The Leak Alarm is reported in the alarms screen log

There is 1 x shared volt free contact for connection to a BMS or other external equipment that activates on either/both Low Level or Leak Alarm.

EVENT LOGGING & TRENDING

PRESS "Event Log" Button on Main Screen



The Event Log displays a history of the working of the fuel conditioner and can be checked by on-site maintenance personnel to ensure correct operation of the unit or to troubleshoot.

The following are time stamped with HH:MM:SS

Pump Started

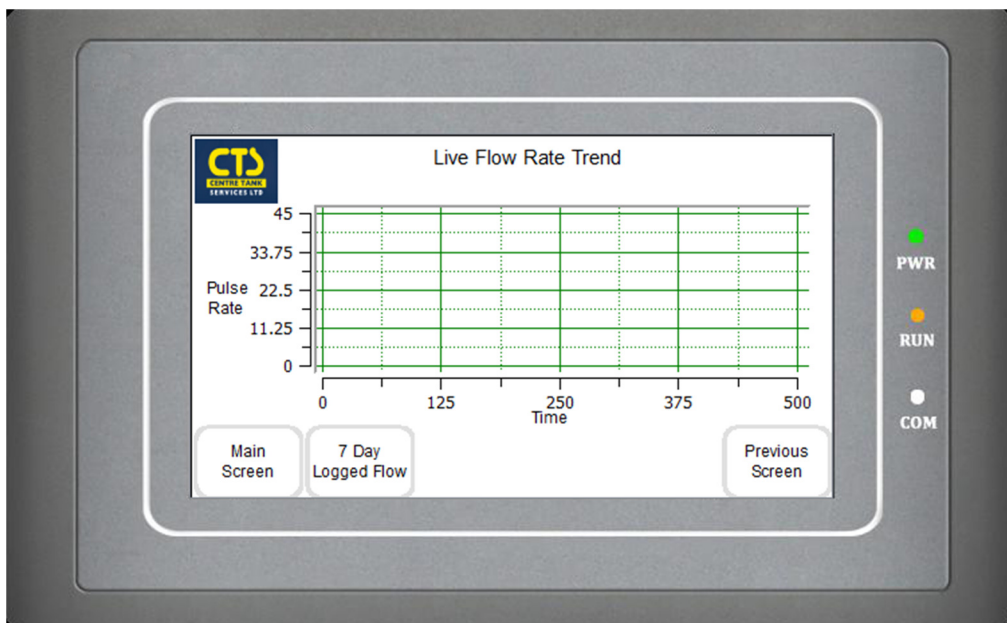
Pump Stopped

Engineer Logged In

Engineer Logged Out

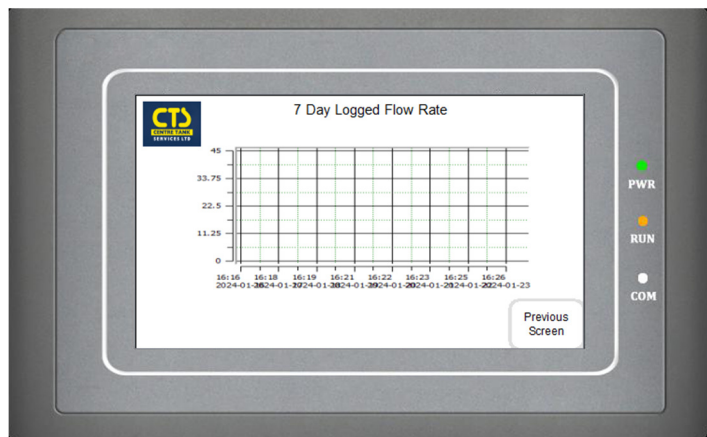
Low Fuel Level

PRESS “Flow Rate Trend” Button on Main Screen



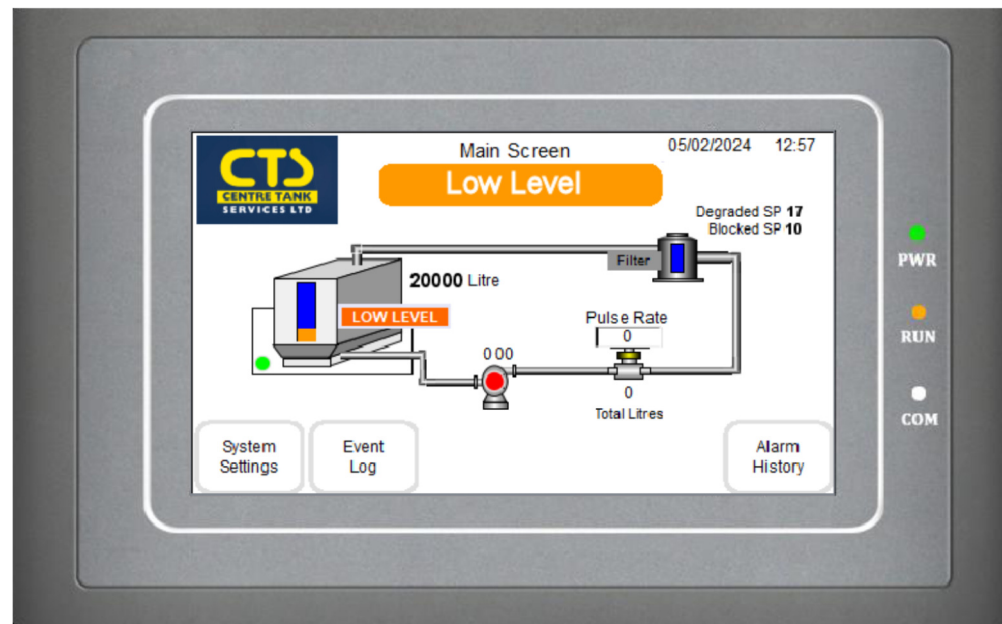
The flow rate trend can be viewed on this screen during pump running only and any reduction in flow can be visibly seen and the filters changed before any warnings are displayed, best viewed late in the day.

PRESS “7 Day Logged Flow”



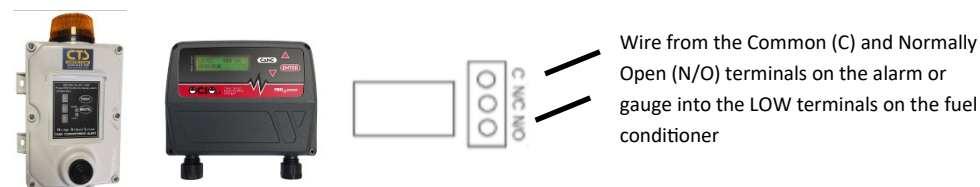
Longer flow trends can be displayed too—useful for historical checking

LOW FUEL LEVEL ALARM



The system is fitted with a Low Fuel Level input terminal. This feature will pause the operation of the pump until the storage tank fuel level returns to normal, therefore automatically recovering from this situation and not reporting a filter block error as there is no fuel passing through the unit.

Connect the relay output on a tank alarm or tank gauge to the corresponding input terminals on the fuel conditioner.



The Low Fuel Level is reported in the alarms screen log

There is 1 x shared volt free contact for connection to a BMS or other external equipment that activates on either/both Low Level or Leak Alarm.