TROUBLESHOOTING

If the RED light comes on when the pump switches off

- Check if there is a non-return valve fitted to the suction side.
- Check that the tank is no higher than 2.8m as the weight of fuel in the line may force the flow switch to close prematurely. Installer must respect the pressure noted at the front of this manual.
- Check that the minimum pipe dimension of 1" I/D pipe is being used.

RED light comes on whilst the pump is still programmed to run

- Could be taking too long to prime once the pump starts – try changing the timer relay settings (1min & .3secs)
- 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 and the flow switch requires liquid to stay open – any air will cause this to close. Try to shorten the time that the pump runs for – thus split up the 15mins into two lots of 8 mins.
- Check the filters… they are probably blocked.
- Check that the minimum pipe dimension of 1" I/D pipe is being used.

RED light comes on after the system has only run a few cycles

- Likely that the filters are actually blocked!
- 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.

Recirculation Unit

Complete with 5 micron filtration for particles, 30 micron water filtration, and a Purafiner fuel conditioner and control electronics.

WARNINGS

- Unit is not designed for pumping any fluid other than standard diesel 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 re-circulation 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 = +2.4bar. If in doubt install pressure gauges as per the pump installation manual.
- Unit installation must be done by a competent fuel installation engineer.
- Make sure there are no warning lights 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 joint are not damaged by installation pipework.
- Fluctuating electrical parameters and fuel additives will reduce the life of the pump.
- 30min duty cycle . Do not run the system for cycles greater than 30mins.

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 media
- Vanes and cover o-ring for pump
- Clean pump inlet filter
- Replace 12v safety relay (next to fuse) within electronic enclosure
- Confirm pump is operating to declared electrical specification
- Depending upon tank construction it may be necessary to check and clean the magnetic conditioner.

SPARE PARTS

F00611040—Spare water captor filter element 30 Micron.

F00611030—Spare particle filter element 5 Micron.

R112760000—Vane kit for Panther pump.

R11461000—Front cover plate o-ring.

ELEC5034—12v Contactor

SWS1035—Float probe for drip tray/leak.

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

BCS1063 - 1” Male x Female Union for inlet and outlet, for easy installation.

* All parts are RTB warranty and do not extend the warranty period. Refer to our T&C’s for further information.

DIMENSIONS

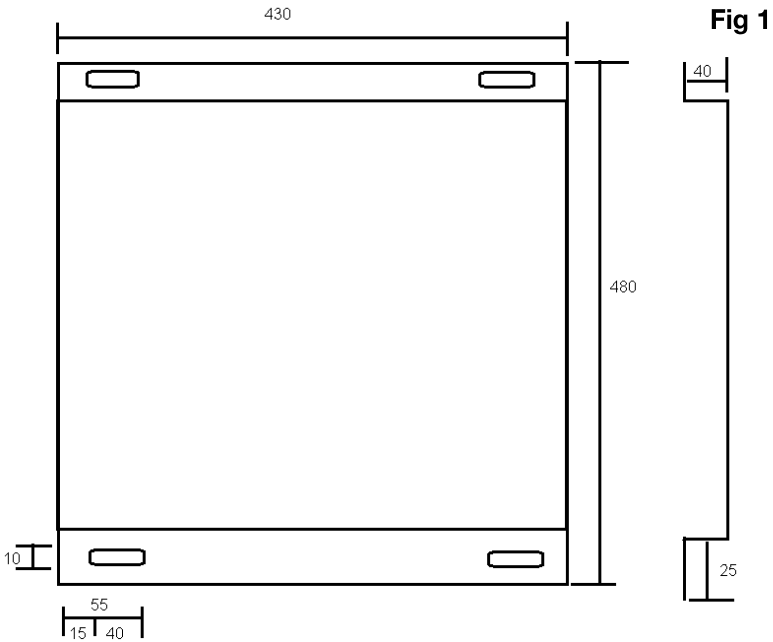


Fig 1

* All sizes are in mm and approximate

Max width of unit with elbows is 585 mm Max depth of unit is 250mm

Max height with filters closed is 780 mm

Recommended installation area requirements 635 mm wide x 1000 mm high

INPUTS & OUTPUTS

The inputs and BMS outputs all have labels. The flow switch is already connected. The low level and leak inputs are labelled next to the flow switch input, and should be doubled up if connecting both. The low/leak input is fuse protected @ 12v 100mA. The BMS clean contacts are located on the right top row and also labelled for connection to BMS.

SPECIFICATION

- For the re-circulating of diesel fuel in a storage tank, 1.5x tank capacity over 28 days
- IP55 protected electronics & pump, installed on a rear back plate for easy mounting to a tank.
- Magnetic fuel conditioner for breaking down molecules and double stage water and particle filtration.
- Control panel with large, visible coloured lights for alerting to a problem.
- The internal timer that controls the pre-set time periods that the fuel is circulated, is determined by your questionnaire (if completed).
- Mushroom style emergency stop button on the plate to allow the immediate stop of pump functions by anyone.
- In the event of the filters blocking, the filter light on the control panel will illuminate and the pump will switch off until the filter is replaced.
- 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 light on the control panel and turns off the pump, and can be doubled up for a leak probe if there is a drip tray installed.
- Two passive BMS outputs for remote warning of filter block and low level/leak/fault to alert the user that they need to take action.

<u>Two models are available:</u>

CTS1033 - For circulating (50lpm) max 3000 litres per day (40,000l tank)

CTS1048 - For circulating (70lpm) max 4,000 litres per day (70,000l tank)

INSTALLATION

Your unit will be already pre-wired with a 600mm fly-lead. Please wire this through a suitable connection / isolation box, fused at 13A with a stable 230v 50Hz supply.

- 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. NRV must be installed on suction line inc wire strainer. Max suction pressure = -0.3bar, Max delivery pressure = +2.4bar. 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 7)
- Connections to the inlet and outlet can be via flexible couplings and union fittings.
- Once all pipework has been installed and the power is connected, open the valves and press and hold the priming button inside the panel (to be done by a competent installer) until fuel flows through both filters. If ACV installed then may require back –filling of the suction line. Refer also to pump user manual included.

IMPORTANT!

- Unit must be fitted with a suction non return valve.

Please note: You must use the leak probe if fitted to a tank with a closed compartment that has a containment area. If the unit leaks into this containment area then the system will shut off to prevent the tank emptying.

CHANGING BLOCKED FILTER

The unit is fitted with a flow switch that detects when either of the bowl filters are blocked. Upon detection, the flow switch 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 the power cycled.

1. IMPORTANT: Press the mains isolator on the plated unit to ensure the pump is isolated from power whilst maintenance is carried out.
2. Turn the lever ball valve off on the fuel inlet to prevent fuel loss.
3. Drain the filter bowls by using the drain valves fitted to the base of each filter.
4. Remove the plastic clear bowl by unscrewing the large black encapsulating nut.
5. Replace the blocked filter with a spare element.
6. Refit the clear plastic bowl and tighten the large black encapsulating nut.
7. Make sure that the drain valve is in the closed position.
8. Open the lever ball valve on the fuel inlet.
9. Reset the isolator, and if in timer mode the pump will automatically run for 10 seconds, if not follow initial priming instructions on page 5.
10. If no flow is detected the pump will switch off again, if this happens repeat step 9 and check valves are in the open position and check valve is not stuck.

LIGHT INFORMATION

Internal Fuse OK

This protects the low/leak input at 100mA—Change the fuse if this does not illuminate.

Fault Light

Illuminates if the safety fuse activates or the safety contactor fails, or the Low input / Leak input state changes. The pump will not run during this phase. Once the fault is cleared the pump will resume on the timer. Power should be turned off to the unit if the fault can't be rectified, such as no fuel for several weeks.

Filter Blocked Light

Illuminates if the flow beyond the filter reduces past it pre-set limit. The pump will not run during this phase and will not restart until the filters have been changed and the power cycled. Power should be turned off to the unit if the filters can't be changed in a sensible period of time.

12v Internal Power

Illuminated to show that the 12v PSU is working normally. Check and change PSU if not operating.

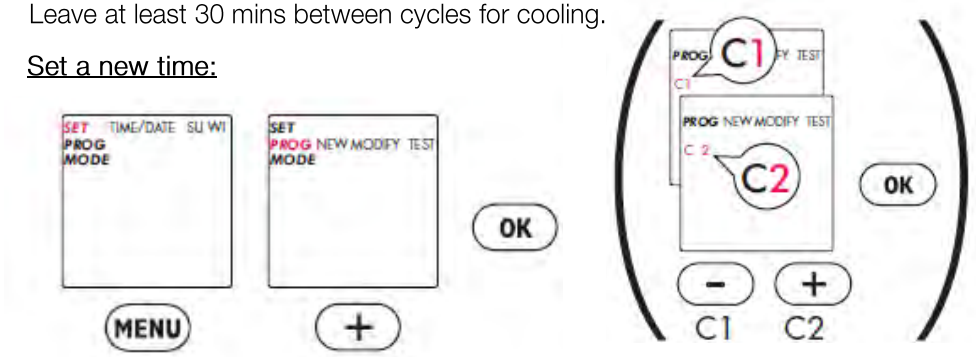
230v Power

Illuminated to show that the unit has 230v mains power. Check the MCB inside the unit and the incoming supply if this is not illuminated.

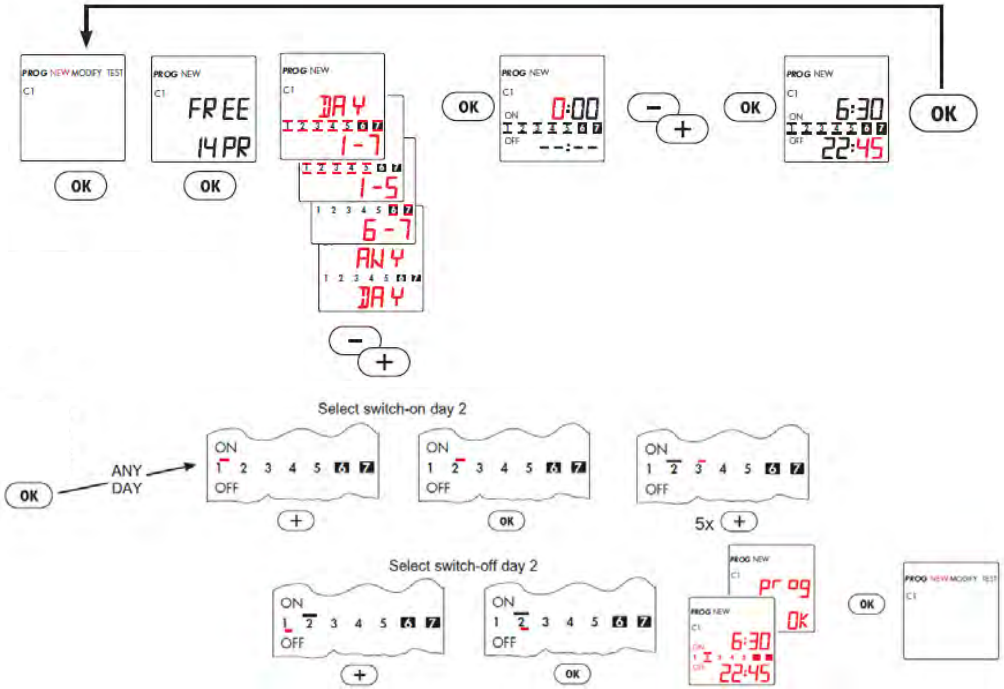
TIMER CONFIGURATION

The timer will be preset based upon cycling the tank once per week.
Do not set the timer to run the pump for any longer than a 30min cycle.
Leave at least 30 mins between cycles for cooling.

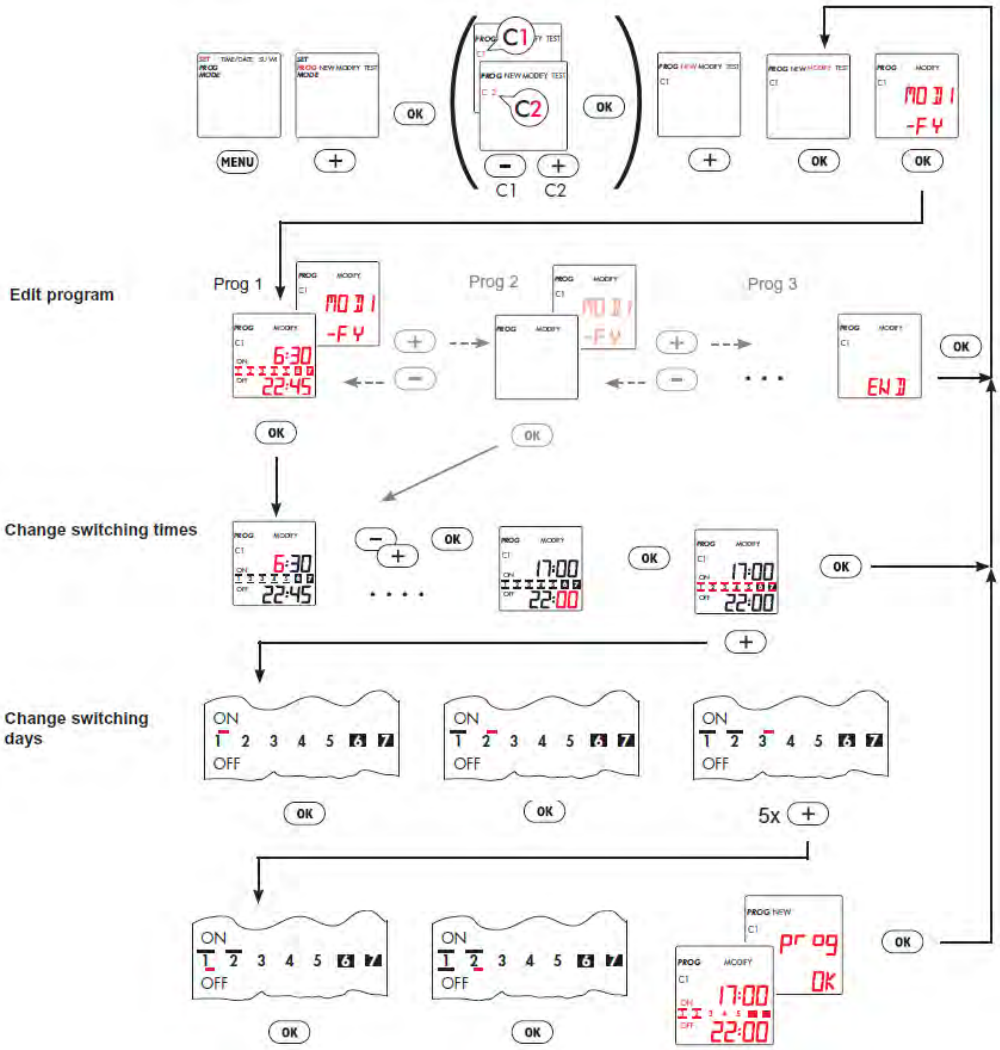
<u>Set a new time:</u>



Programming: One program = switch-on time +switch-off time +switch-on and switch-off days.
Programs with predefined switch-on / switch-off days. • DAY 1-7 (MO-SU) • DAY 1-5 (MO-FR)
• DAY 6-7 (SA & SU). Programs for each channel are interlinked with OR logic.



Modify a time:



Delete a time: