



TS-101 Tank Monitor Installation Manual

TS-101 Master Display Unit

Provides the following functions:

- visual indication of tank level
 - turn pump on or off
 - display Lts or Gals
 - all tanks are name selectable e.g. (Aft-Fresh) (Port Fresh) (Fresh Tank)
 - audible alarm
-

Electrical Specifications TS-101

Operate voltage = 9 - 30vdc
Quiescent Current = 30mA @12vdc
Alarm/Buzzer output = 300Ma @ 12vdc
Pump output = 4 Amps @ 12vdc
Size = 65mm x 65mm x 80mm Deep
Data Retention = 50 years (without power)

Outputs

Pump Output (4 Amps @ 12vdc)

The TS-101 has one output, which can be used to control an interposing relay (see page 4) for a pump such as a fill pump. An auto-off feature is standard and is particularly helpful in preventing damage caused by a pump running dry.

The auto-off point is programmable.

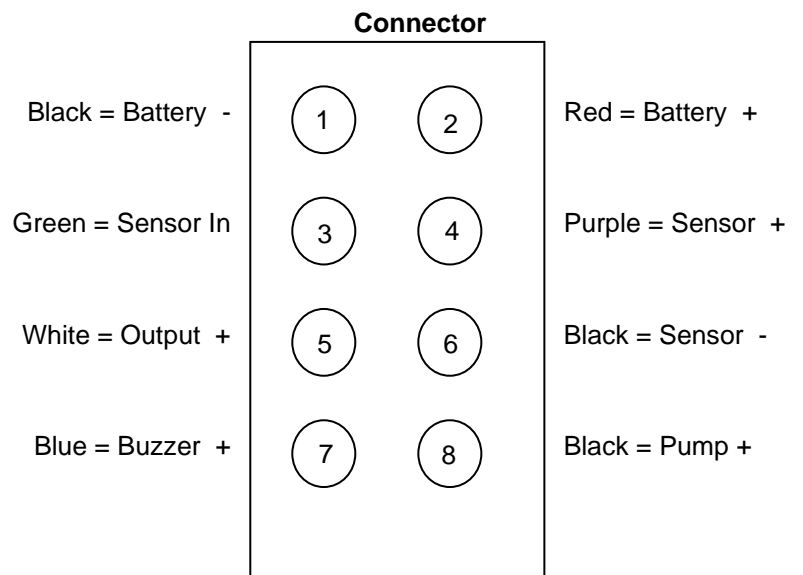
To turn the Pump output On press and hold the Enter/Pump button for 5 seconds.

To turn the Pump output Off press the Enter/Pump button, or the output will automatically turn Off when the Pump Off point has been reached.

Alarm Output (300Ma @ 12vdc)

The alarm output can be programmed to activate a relay when the waste tank reaches the set alarm point, or can be used to **disable the toilet**, (see Fig1 or Fig 2 page 4) or used to **activate a buzzer** (buzzer supplied)

Wiring

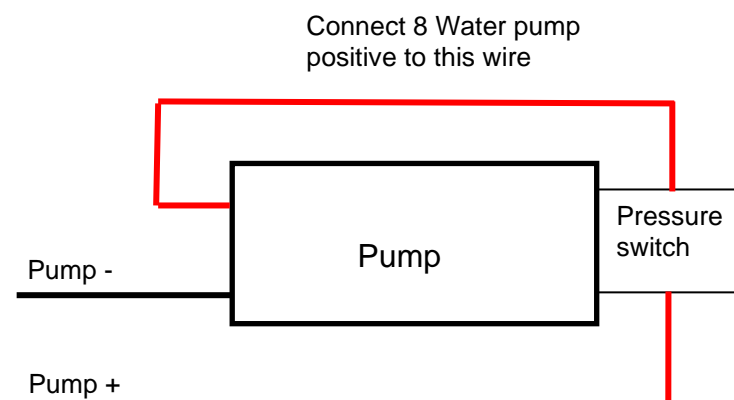


Connect as follows:

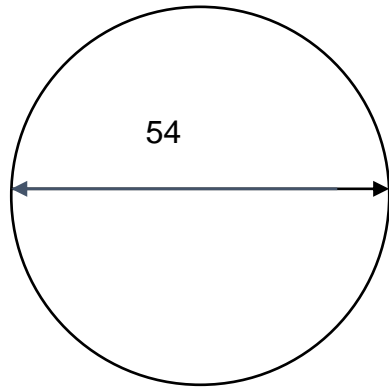
1. Black to Battery negative
2. Red to Battery positive
3. Green to flow sensor in (yellow)
4. Purple to flow sensor positive (red)
5. White to Relay to control a fill pump (if required)
6. Black to flow sensor negative (black)
7. Blue to Buzzer positive
8. Black to water pump positive (see below)

Most water pumps will have a positive wire to the pump pressure switch then another wire from the pressure switch to the pump, the connector (8 Black) needs to connect to this wire. E.g. this tells the TS-101 when the pump is actually running.

Pump Circuit Connection



Mounting



Drill a hole using a 50mm hole saw



Size= 75mm x 75mm

¾ BSP Flow Sensor



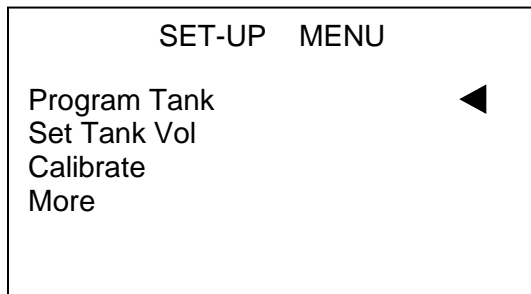
Sensor Installation

Fit ¾ BSP hose tails on either end of the sensor (using thread tape) cut the water pipe after the pump and insert the sensor, the sensor may be fitted in any convenient location AFTER the pump and does not need to be close.

Programming Instructions

Step 1: Placing the unit in Program Mode

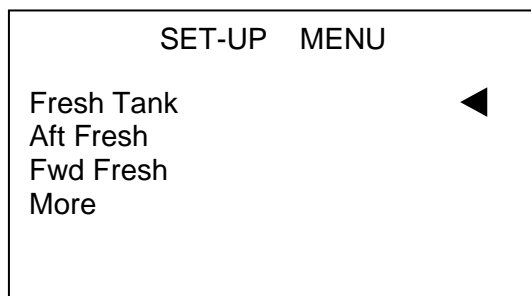
Press and hold down the Scroll key now press and hold the Mute key. Hold together for 3 seconds.



Push the Enter/Pump button to select the tank Name or scroll to another function.

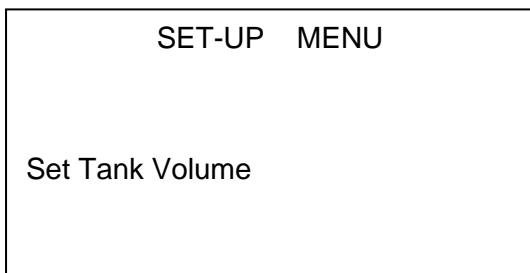
Step 2: Selecting Tank Name

The display will now show:



Push the Enter button to select the tank Name or scroll to another name.

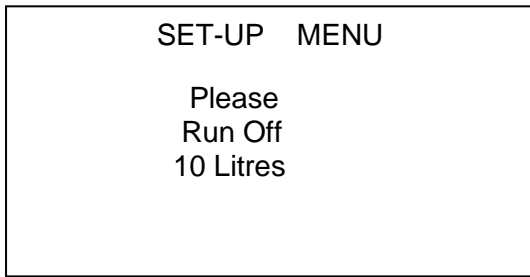
Step 3: Set Tank Volume



The default value is 400. Push the Scroll button to decrease or the Mute button to increase the value.

Push the Enter button to save and exit.

Step 4: Calibrating

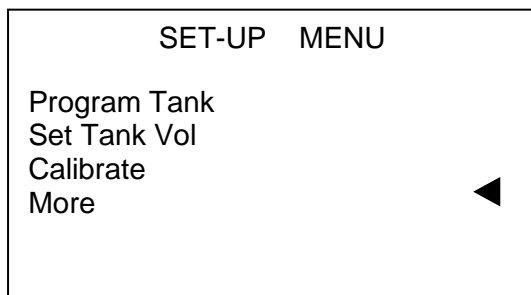


PLEASE NOTE: The unit is pre-calibrated and will only need re-calibrating if you find it is not accurate enough. Also see page 9 *Set Pulses*

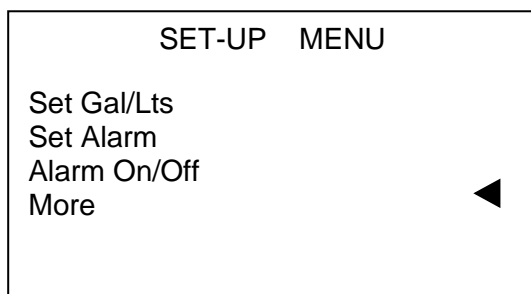
To calibrate you need to turn the tap On and run off 10 litres (or Gals) When the 10 litres has been run turn the tap Off. This will count the number of pulses from the sensor and divide by 10, this will give the number of pulses per litre so it will not matter how fast or slow your pump is the system will self-adjust.

When the pump is turned Off the unit will automatically save this value and exit.

Continue

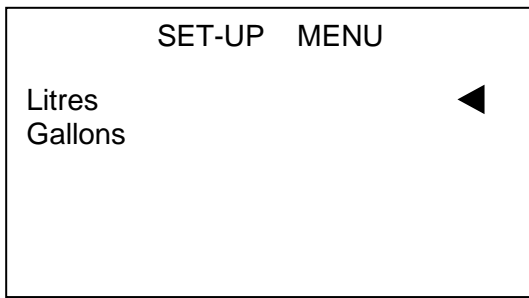


Use the Scroll button to Scroll to More and push the Enter button to select more functions another functions.



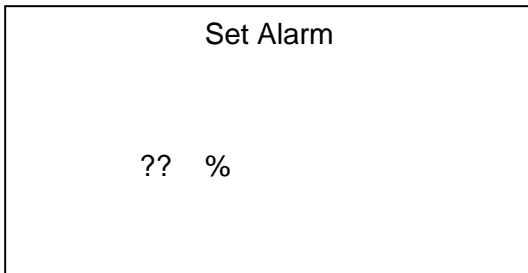
Use the Scroll button to Scroll to the function and push the Enter button.

Step 5: Set Gal/Lts



Use the Scroll button to Scroll to the setting and push the Enter button.

Step 6: Set Alarm



The alarm point is a percentage of the tank e.g. If the tank Volume is set to 100 lts and the alarm set to 10% then the alarm will sound at 10 lts

Push the Scroll button to decrease or the Mute button to increase the value.

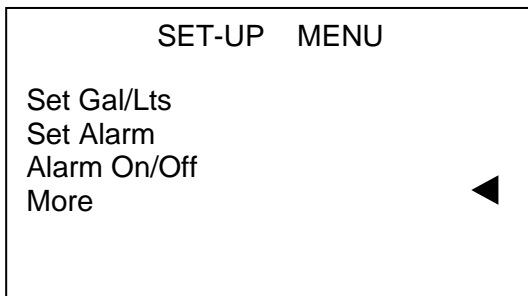
Push the Enter button to save and exit.

Step 7: Alarm On/Off

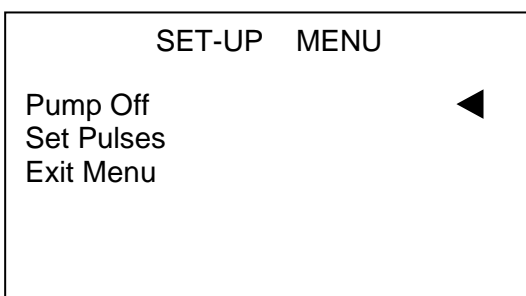
The default setting is On if you select the function it will turn it Off, if you select again it will turn it On etc.

e.g. the function toggles every time it is selected.

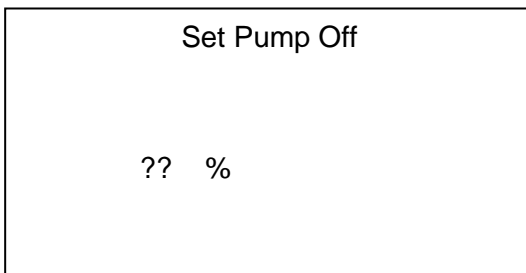
Continue



Use the Scroll button to Scroll to More and push the Enter button to select more functions another functions.



Step 8: Set Pump Off



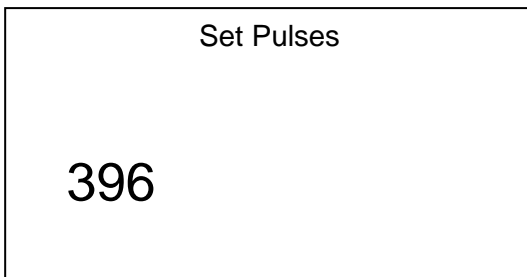
The pump Off point is a percentage of the tank e.g. If the tank Volume is set to 100 lts and the pump off point is set to 10% then the pump will turn off when the tank reaches 10 lts

Push the Scroll button to decrease or the Mute button to increase the value.

Push the Enter button to save and exit.

If the Pump key is pressed and held for 3 seconds the pump output will turn on and automatically turn Off when the Pump Off point is reached

Step 9: Set Pulses



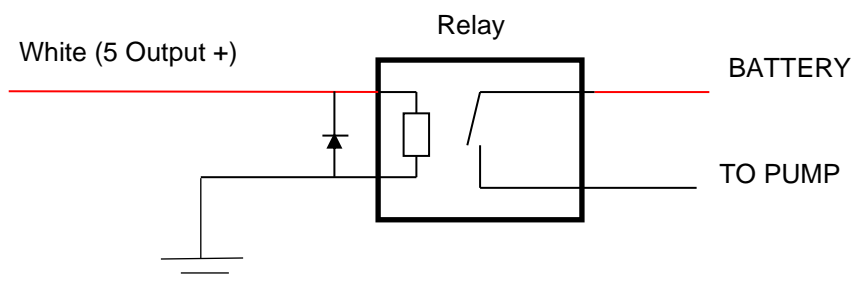
The Set Pulses allows you to tweak the calibration without having to run off 10 litres

The unit is factory pre-calibrated to 396 pulses per litre but you can increase or decrease this value to fine tune the calibration.

Push the Scroll button to decrease or the Mute button to increase the value.

Push the Enter button to save and exit.

Output Pump Circuit Connection



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