

### Water In Fuel Sensor (WIF) option for Delphi 296 type Fuel Filter

MastMinder offer various Water In Fuel (WIF) sensors as options for monitoring the quality of the fuel.

The example shown is for the Delphi 296 type Diesel Fuel Filter found on most Caterpillar, Olympian, F.G. Wilson and many other generators. It is supplied as a replacement kit consisting of a larger catchment bowl with a water detecting element and drain screw.

The kit comes complete with all necessary gaskets, wiring and extension bolt.



#### Water In Fuel Sensor (WIF) installation procedure.

1. Firstly, as always, if there is a backup generator then ensure it is running satisfactorily or there is enough reserve in the main site batteries, then operate the Emergency Stop button to this generator and disconnect the 12 volt generator starting battery.
2. Ensure you have all the components and that you understand the dismantle and reassemble procedure.
3. Prior to disturbing the existing fuel filter, the new WIF sensor can be wired in as per the figure above, the Blue centre connector connected to Ground (-ve), the Brown left-hand connector connected to the 12 volt +ve via its own independent inline fuse provided and the right-hand Green/Yellow cable connected to Terminal 7 on the IO Unit.

4. Ensure when establishing the left-hand and right-hand connectors that the “12V.” symbol is at the top and the groove in the connector is at the bottom, wrong connections may damage the unit.
5. The operation of the unit can now be tested by re-connecting power to the IO Unit and WIF Sensor and using the connection from the lap-top to check the input indicates “0” for OK.
6. With your finger over the bolt hole at the bottom of the bowl, or suitable plug, then fill with water and re-check the WIF input signal, this should now show “1” indicating the presence of water.
7. After successfully testing then empty and clean the bowl and disconnect the power again.
8. Dismantle the existing Fuel Filter in the usual way as if you were replacing the filter element.
9. Using a new fuel filter element and any new gaskets and rubber O-rings then re-assemble in the usual way except discard the original bowl and use the new bowl with the WIF Sensor installed together with the new bolt extension pieces. Tighten the bolts in the usual manner and do not over-tighten.
10. Re-connect the 12 volt generator battery and ensure the IO Unit and WIF Sensor fuses are connected, turn on the AMF Panel, take off the Emergency Stop button, reset any alarms and test start the generator for a few minutes to ensure there are no leaks of diesel around the fuel filter.
11. Installation now completed.

#### **Water In Fuel Sensor (WIF) Maintenance note.**

- If the WIF Sensor detects Water in the fuel line then it is important to remedy this as soon as possible to reduce the chances of water passing the filter and damaging the Injector Pump and / or injectors.
- There is a small plastic drain plug to drain any captured water in the filter. Open this drain plug enough for the water to run out and then as soon as clean diesel is running out then close the plug.
- If the problem re-occurs then the full remedy is to repeat the procedure above to drain the filter of water but also to drain the main fuel tank of water by opening the main fuel tank drain plug at the bottom of the tank and letting the water run away into a container until clean diesel is seen then close the drain plug again.
- It is normal for diesel fuel tanks to accumulate water due to condensation inside the tank, especially in hot humid climates.
- However, excessive water in the fuel could indicate a fuel delivery contractor not taking care with their fuel storage.