

Improvements to power supply for hydrogen generators

Over the past few years we have worked on ways of reducing energy losses of a hydrogen system . One of the greatest CHALLENGES WAS TO REDUCE THE Energy loss of the power supply . We achieved an excellent breakthrough using 10 Power MOSFETS which ran cool and effectively almost eliminated heat energy loss.

These radically efficient units are excellent for all conditions , especially in regions where the ambient temperature is well above 45 degrees Celsius (inland Australia) and stopped thermal runaway .

Even with the NEW Power MOSFET design there is still a Voltage Loss in controlling the circuitry. The voltage loss of 1.5 volts represents 10% of the input energy being wasted when operating on a vehicle with no other electrical loads operating. In conditions where air-conditioners and external lighting is being used this 10 % escalates to a higher percentage and reduces the volume of hydrogen gas generated. Is there a better way? Well yes there is.

We have been testing the gas output from the system in which the only control to the current flow is the solution concentration as well as 30 am auto reset circuit breaker.

We found that the gas production increased by up to 15 %with no extra electrical loading on the vehicle power supply

The setup is as follows; The solution concentration is set to a value when the electrolyte tank was full and running at 25 amp with the system warm. As the system is operating and converting water into hydrogen , the water level in the 3 litre tanks will fall making the solution more concentrated . The current flow increases with increasing concentration . We found the current flow increased to 29 amp by the time 2.5 litres of solution had been used . At this time it was time to refill the tank with distilled water and this reduced the current to 25 amp again. The Point is that by this time e, even when using the PWM power supply it was time to add water anyway and during the interval before the wasted voltage had reduced the possible gas production by 15%.

We have decided to in future do away with using a PWM unit to control the current and only rely on solution concentration. We also use a 30 amp auto reset circuit breaker to stop the circuit if for any reason the current rises to 30amp.

The system is simpler and less likely to cause problems from electronics , thermal runaway and dusty conditions affecting sensitive electronic components

This new arrangement is easily added to existing system that are using PWM power supplies to produce a more reliable and higher output hho generator

This arrangement is especially suitable for larger trucking systems that have larger tanks for the water supply

For More information and diagrams Please call Gavan on 0403177183 or email glknox11@live.ocm