

VEHICLE VOLTAGE MONITOR 12V



SKU# PS-VVM-12V

OVERVIEW

The Vehicle Voltage Monitor is designed to ensure the communication system on board a vehicle is not depleting the vehicle starter battery and can facilitate the recharging of its own communications battery by running the vehicle engine for short periods.

The understanding behind the system is that the vehicle is as an equally important part to the deployed unit as the communication system. To ensure that both vehicle and Communications are functional for an indefinite period during deployment, separate batteries are required. It is easy for the deployed operators to take care of both batteries, and both should be charged and ready for action whenever required.

The **Vehicle battery** is required to start the vehicle at all times and can be recharged by the vehicle alternator as long as the vehicle has fuel. This battery is normally a lead acid type, sized to manage the vehicle for short periods and could be in the order of 40 – 60 Ahr capacity.

The Communications System battery is required to power the communications system for indefinite periods, as long as the vehicle can start to run the alternator. This battery is sized to manage the communications system for extended periods. It can be in the order of 100 Ahr and preferably a deep-cycle AGM type. This Vehicle Voltage Monitor cannot be implemented with only one battery (vehicle). The Monitor is not immersion proof unless the mounting holes are sealed with liquid silicone, so must be installed in a location where immersion is unlikely to happen.



INSTALLATION

1. Mount Vehicle Voltage Monitor box onto a rack/frame with 2 x bolts through the holes provided by removing the lid, inserting two bolts through and replacing the lid.
2. Connect Car Battery Lead to the positive of the existing Car (vehicle) battery,
3. Connect the ground wire to Chassis or Battery negative. (Ensure <0.2 ohm to chassis)
4. Connect Radio battery lead to the 2nd battery positive pole (Radio Battery).
5. Connect Radio Battery Negative to Chassis, or install a similar sized negative lead from Radio battery to car battery negative and ground to chassis at rack.

OPERATION

SET the VVM Decision LEVELS with the DIP SWITCH.

Open the VVM box and set the dip switch according to your own operational requirements.

NOTE: A 15 second start up ON(V) and a 10 second shut down OFF(V) delay prevents voltage fluctuations causing premature switching.

SW_1	SW_2	OFF(V)
OFF	OFF	10.5
ON	OFF	11.0
OFF	ON	11.5
ON	ON	12.0



1. The Vehicle Voltage Monitor will keep the Radio battery (Load) connected to the Car Battery as long as the car battery is above the OFF(V) set level and Radio (Load) will drain both batteries. (If it was above On(V) before - triggered as in point 4 below)

2. Once both the Batteries Voltage drops below the OFF(V) level the Voltage Monitor Switch will disconnect the Radio battery from the Car Battery.

3. The operator will still be able to start the car and alternator will charge the Car Battery up.

4. Once the Car Battery reaches ON(V) set level, the switch will Connect the Car Battery to Radio Battery and continue to charge both batteries to full whereby the alternator charge will be floating the batteries at 14,2V and at 13,9 for the older type alternators.

5. At this stage the car can be switched off again if not driving and stay off until the discharged level reaches the disconnect level OFF(V) as in point 2) above.

Without Alternator Charge during silent field operations:

SOLAR Panels or any other external charging devices can be connected directly to the Radio battery to charge or extend discharge time of batteries when the alternator is able to charge.

If the external charging device (Solar or AC Charger) is connected to the Radio battery and supplying charge when the Car and Radio Batteries are still connected through the Voltage Monitor Switch, both batteries will be charged.

Any 12V (14V Nominal) solar panel type or array can be used provided it has the required voltage ratings.

Any AC Car charger can be connected to the communications battery when stationary.

We recommend our Vehicular DC power supply controller with AC inverter providing External Charge, AC and DC out for full operational supply, see

SKU # PS-PB-V

For field deployed vehicle stations we can recommend using 3 or 4 of our flexible rugged solar panels rated at 80W each to recharge batteries, see **SKU# SP-FP-C79**

Vehicle Voltage Monitor Installation

