

## GAMMATRONIX BATTERY CHARGE / STANDBY LEVEL INDICATOR (Model 'G')

### Specifications :

For 12v vehicle systems. Accuracy to +/- 0.15v. 10 to 20mA in charging mode, less than 500uA (0.0005A) average in standby mode. Microprocessor controlled. Internally fused (self resetting) and reverse voltage protected. Unit will operate down to 3.8v and up to 16v. Operates with all types of 12v lead-acid batteries including AGM and Gel types.

### Function :

When vehicle engine is running, the unit will confirm charging status of the alternator and battery via colour coded displays. When the vehicle is parked, the unit will go into "Standby" (micropower) mode, and monitor the battery voltage to indicate if charging is required whilst the vehicle is idle. This is a particularly useful feature when motorcycles or cars are 'laid up' for the winter, or during prolonged idle periods. The flashing feature of the LED in "standby" mode is also a useful anti-theft deterrent, imitating the 'armed' LED of a theft alarm. The device makes a 'rolling average' over the last 2 seconds, which will give some immunity to fluctuating battery loads. Indicated levels are as follows :

Charging Mode (Yellow wire @ 12v, ignition on)						Standby Mode (No volts on Yellow wire)			
Red / Green Flsh	Green	Yellow	Yell Flash	Red	Red Flash	Green flash	Yell Flash	Red Flash	
> 15.2v	13.2v	11.8v	11.5v	11.2v	<11.2v	> 12.5v	> 12.1v	< 12.1v	

### Fitting :

The device is comprised of a 10mm red/yellow/green LED within an encapsulated waterproof sealed casing, which also houses the control electronics. The unit is mounted by means of an adhesive base, optional screw, and cable tie, to a suitable location. Alternatively the supplied Velcro strips can be used. On a motorcycle, mounting is typically to the side of the instrument binnacle or to the handlebar area.

The unit has three wires to connect. For greatest accuracy, the red and black wires should route directly to the battery. Use a fuse with 5A max rating in the red positive wire close to the battery (not supplied, there may be a suitable fused circuit already on the vehicle) to protect the wiring run. Connect Red to battery positive (via fuse), and black to battery negative. *(If not wiring direct to the battery, accuracy may be affected slightly due to voltage drops / losses in wiring if connected to existing high current load circuits.)* Connect the yellow wire to the switched 12v supply from the ignition switch, so that 12v is present on the yellow wire only when the vehicle ignition is on. ***(If your vehicle is an older type with POSITIVE earth, then the yellow wire cannot be connected directly to the ignition switch circuit. Instead, wire the coil of a relay to the ignition switch, and use a contact on the relay to connect the yellow wire to the positive (earthed) connection.)***

If you only require the unit to operate when the vehicle is running, connect both yellow and red wires to a power take off point at the ignition switch circuit. This way, the LED will operate only in "charge mode", and only when the engine / vehicle ignition is on.

The unit has inbuilt interference suppression. In very noisy electrical environments it may require additional in-line suppression which can be purchased from car radio installation stores.

### Operation

When the vehicle is parked (ignition off) the unit will enter "Standby mode". The LED will flash once every two seconds in Green, Yellow, or Red. These indicate the level of battery charge, with Green being 'OK' and Red suggesting charging is needed. *The minimal current draw of the unit in this mode will not flatten your battery. (The battery will self-discharge before the LED monitor has any effect).*

Turning on the ignition will cause the unit to enter "Test Mode", lighting Red, Yellow, and Green in sequence. It will then begin to monitor battery charging. With the ignition on, the unit will indicate charge level. Anything other than Green with the engine running indicates a possible problem if occurring when the vehicle is driven (Yellow may display at tick-over). A flashing Red/Green indicates a possible alternator regulator failure, as your system is operating at over 15.2v, which may damage vehicle electronics and battery.

### Safety, end of life, and warranty statement



*This unit is an installable component and not a complete system in its own right and therefore requires installation. The installation, use and suitability in a given application is the responsibility of the installer. Any damages or consequences are limited to the replacement of the unit under the 12 month guarantee. Do not allow the unit to become damaged, dismantled, or make modifications to the enclosure or internal parts. Do not use the unit outside of its operating voltage specification (according to model.) At end-of-life this product should be taken to suitable recycling facilities and not put into general household rubbish.*