

## GAMMATRONIX MULTIMODE 6v, 12v, 24v PROGRAMMABLE BATTERY MONITOR

### Specifications :

- Compact programmable Six LED battery level indicator. Optimised for lead acid / Gel and AGM types. (Not suitable for Lithium "Shorai" type cells which have a different operating voltage range.)
- Dimensions 49L x 24H x 16mm deep approx.
- Operates over 6v, 12v, 24Vdc ranges, with three different display modes, three brightness levels and six selectable indicated ranges.
- Consumes approx 400uA (0.4mA) flashing mode, 3mA single LED mode, 10-12mA in bargraph mode. (Brightness Dependent).
- Operates from 5.2v to 30v DC, regardless of programmed range. Fused, and reverse protected. Accuracy to +/- 0.15v.

**Ranges:** Unit can be set according to below tables. *References to 'Lead acid' batteries below include Gel and AGM types.*

| Volts Map  | Red/<br>Gn | 3 <sup>rd</sup> Gn | 2 <sup>nd</sup> Gn | 1 <sup>st</sup> Gn | 2 <sup>nd</sup><br>Yell | 1 <sup>st</sup><br>Yell | Red  | Red<br>Slow | Red<br>Fast |  | Display Mode | Bright-<br>ness | Battery<br>Type |
|--|------------|--------------------|--------------------|--------------------|-------------------------|-------------------------|------|-------------|-------------|--|--------------|-----------------|-----------------|
| 1 = No Load  | 15.0       | 12.6               | 12.3               | 12.1               | 11.8                    | 11.6                    | 11.3 | 10.5        | 10.3        |  | 1 = Bargraph | 1=low           | 1 = 6v          |
| 2 = Shallow  | 15.0       | 12.7               | 12.5               | 12.3               | 12.1                    | 11.9                    | 11.7 | 11.5        | 11.3        |  | 2 = Single   | 2=med           | 2 = 12v         |
| 3 = Standard   | 15.0       | 12.5               | 12.1               | 11.8               | 11.5                    | 11.2                    | 11.0 | 10.7        | 10.5        |  | 3 = Flash    | 3=high          | 3 = 24v         |
| 4 = Vehicle<br>with charging   | 15.0       | 13.2               | 12.5               | 12.0               | 11.7                    | 11.4                    | 11.0 | 10.7        | 10.5        |  |              |                 |                 |
| 5 = Med Load   | 15.0       | 12.4               | 12.1               | 11.6               | 11.2                    | 10.8                    | 10.4 | 10.0        | 9.8         |  |              |                 |                 |
| 6 = Deep   | 15.0       | 12.1               | 11.8               | 11.4               | 11.0                    | 10.6                    | 10.1 | 9.6         | 9.4         |  |              |                 |                 |
| <p>Note 1: For 24v, double the above values. For 6v, use half the above values.</p> <p>Note 2: Refer to your battery's data sheet especially if you wish to use other than range 1 to 4.</p> |            |                    |                    |                    |                         |                         |      |             |             |  |              |                 |                 |

**Installation :** The unit has two wires. Connect the red wire to supply positive and the black to supply negative. The unit is internally fused but should have the wiring to it protected by a suitable local fuse, 5A maximum. The unit has inbuilt interference suppression, but in very noisy electrical environments it may require additional in-line suppression which may be purchased from car radio installation / automotive stores.

The unit is intended for surface mounting via the backing tape or tie and base provided. The installation kit provides cable ties, connectors and a mounting tab and generous 1.2Mtr leads for you to determine the best means of connecting and mounting for your particular installation. The included fuse and holder may be used in the red supply lead if your installation does not have a suitably fused power take off point. You can use the scotchlock cable connectors if they are suitable for your wire loom sizes.

**Operation:** The unit will operate according to programmed mode with single LED, single flashing LED, or bargraph LED display. Overvoltage / Overcharge is indicated by the end (1+6) red and green LEDs flashing. The red LED will also flash as the battery comes close to its extremely discharged point. Lead acid batteries have a final 'end voltage' at a level depending on the current drawn from it. Heavy currents and use of leisure specification deep discharge batteries allow a lower final voltage. Drawing current past the 'end point' will shorten battery life. Always refer to your batteries' data sheet to determine its maximum discharge point.

**Programming:** You can set the unit to operate under one of each of the following conditions :

- Three different display modes (one flashing LED, one travelling LED, 6 LED bargraph)
- Three different brightness levels
- Three battery voltages – 6v, 12v, 24v.
- Six different display "maps"

You may program the unit as many times as you wish, and cannot damage it by making an incorrect setting – for example 6v on a 24v supply will not harm the device (though it will flash red/green to indicate it thinks it sees an over-voltage condition for its 6v scenario).

**The unit is supplied initially programmed to work at 12v DC, map 4 (Vehicle with charging system), high brightness, bargraph mode.**

If you want to change the settings you can do so as follows :

Using a paper clip or similar, press the programming button through the small hole by the red LED. Keep pressed for 5 seconds. The unit will flash all LEDs to indicate programming mode. Release the button.

The unit will indicate the current

**Display Mode (1-3)** . Press the button to cycle between settings 1 to 3 (one being the left most red LED). If you do not wish to make a change, do not press the button. 1 = Bargraph, 2 = Single, 3 = Flash

Five seconds after the button is last pressed (if you ever pressed it) the unit will flash all LEDs to indicate it has moved to the next setting, and display the

**Brightness Setting (1-3)** where 1 is dimmest and 3 is brightest. Make any change, if needed, and five seconds later, all LEDs will flash and the unit will cycle to :

**Battery Type** setting (6v, 12v, 24v). 1 = 6v, 2 = 12v, 3 = 24v. Make any change, if needed, and five seconds later, all LEDs will flash and the unit will cycle to the final setting :

**Volts Map.** Select which of the six settings you wish to use in the same method as described.

Five seconds later, the unit will strobe through each LED in turn in a line, and then repeat back to you the settings you input, in the order "Display Mode", "Brightness", "Battery Type", and "Volts Map". The unit will then save the settings, and operate in the mode programmed. If the unit is to be used outside, the small programming hole should be covered so that water may not enter. The supplied Gammatronix label will perform this task.

## 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, immersed in water, dismantled, or make modifications to the enclosure or internal parts. Do not use the unit outside of its operating voltage specification. At end-of-life this product should be taken to suitable recycling facilities and not put into general household rubbish.*