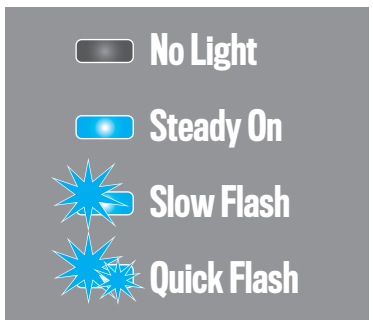
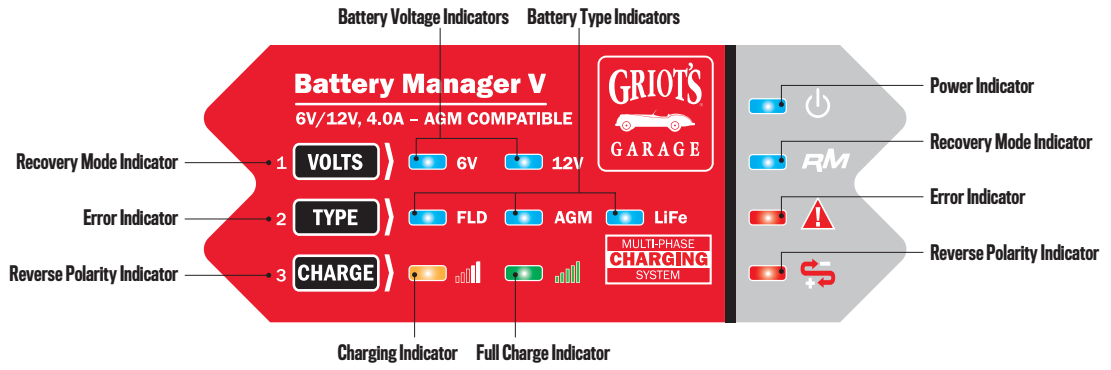
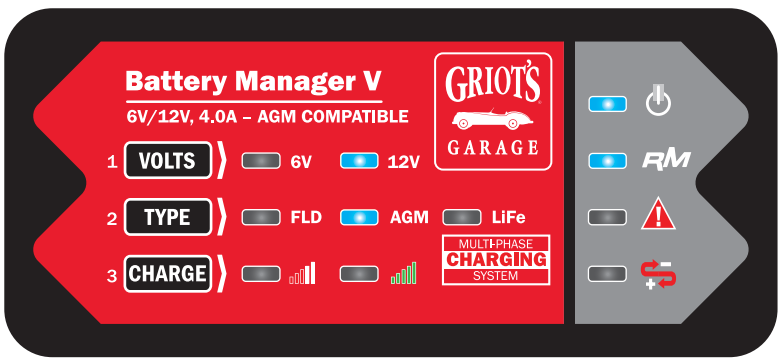
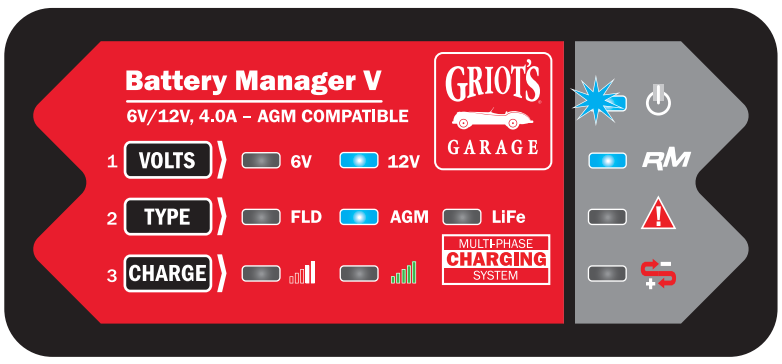
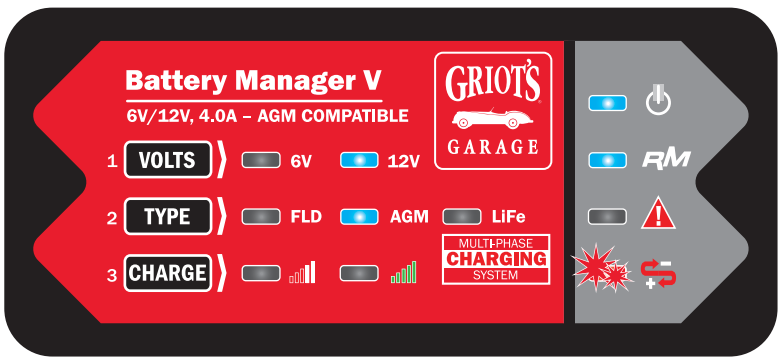
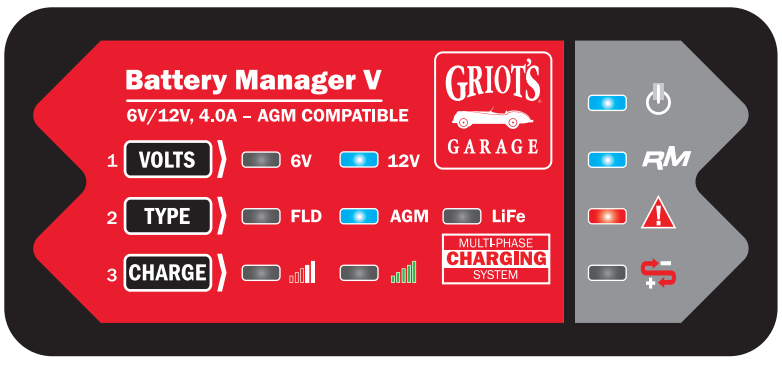
Battery Manager Troubleshooting Guide: Page 1





	LIGHTS	CAUSE	SOLUTION
Scenario 1 	**One Battery Voltage Indicator steady on and one Battery Type Indicator steady on – neither Charging Indicator on**	Unit is in Standby Mode either because no charging has been commenced or charge button was pressed during charging process which has halted any charging	Use Battery Volts Selector and Battery Type Selector to ensure appropriate indicators are set for battery being charged, then press charge button once to begin charging process
Scenario 2 	**Power Indicator flashing and Recovery Mode Indicator steady on OR Power Indicator ONLY flashing**	Low Energy Consumption Mode	The charger is designed to minimize energy consumption as much as possible. If the unit is left for 10+ minutes without a key pressed, the charger will enter Low Energy Consumption Mode. If a charging routine has been initiated, the unit is still functioning and detecting what the battery needs but is now reserving energy. At any time, you can wake the display by pressing any button one time. If a charging routine has not been initiated, press any button to wake the display, use Battery Volts Selector and Battery Type Selector to ensure appropriate indicators are set for battery being charged, then press charge button once to begin charging process
Scenario 3 	**Reverse Polarity Indicator flashing quick**	Power is not being sent to output cables because reverse polarity has been detected	Disconnect the output cables and reconnect them following the recommendations in the Battery Manager V Manual
Scenario 4 	**Error Indicator steady on**	Charger has detected less than 1V across the clamps	Unplug unit and check connections. Plug back in and verify all settings. If all settings are correct and the battery is not damaged, the issue is likely that the battery voltage is below 1V. To override, press and hold the charge button for 3 seconds. The charger will begin charging and will complete the cycle, turning off automatically when the battery reaches full charge.
Scenario 5 	**Error Indicator flashing quick**	Charger has detected overvoltage – either battery is over charged or the voltage selected is lower than that of the battery (i.e. 6V selected on a 12V battery)	Verify all settings including the Battery Voltage are correct. If settings are incorrect, unplug unit and check connections, plug back in, correct setting selections then press charge. If all settings are correct, unplug unit and remove connections, then use a multimeter to check the actual voltage of the battery. If a 12V battery reads 15V or higher, there is likely damage to the battery and it should be replaced.

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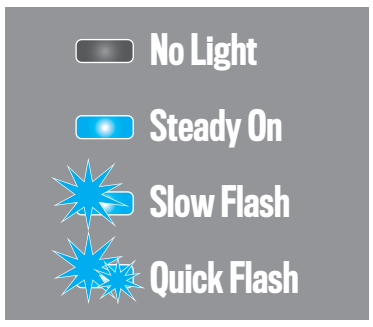
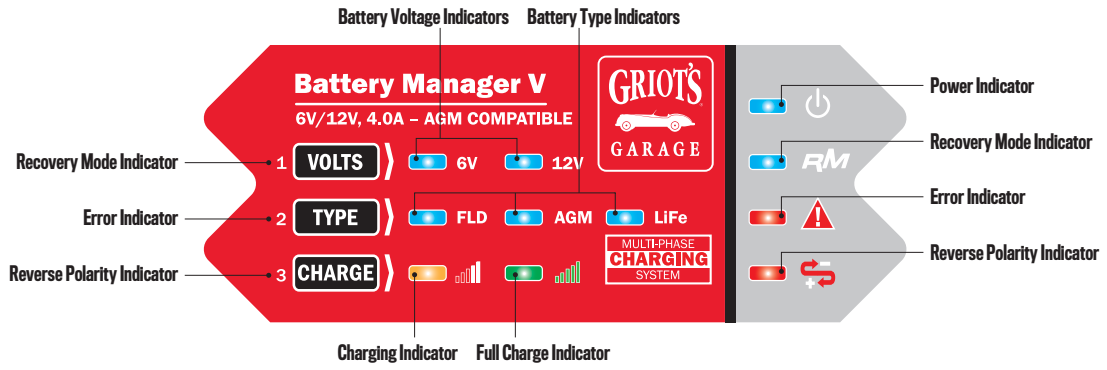
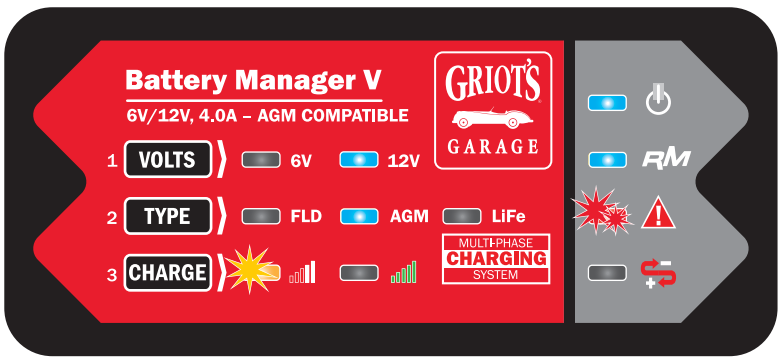
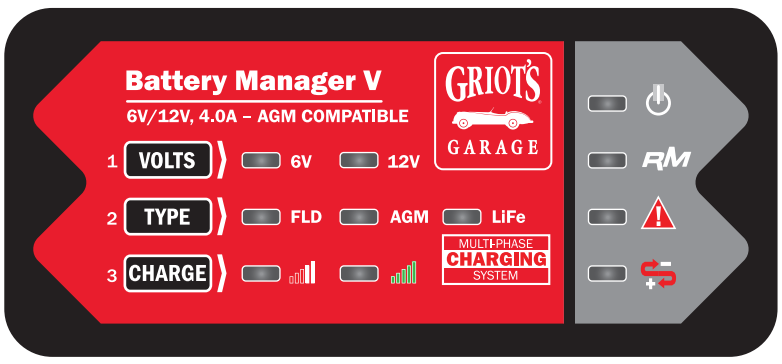
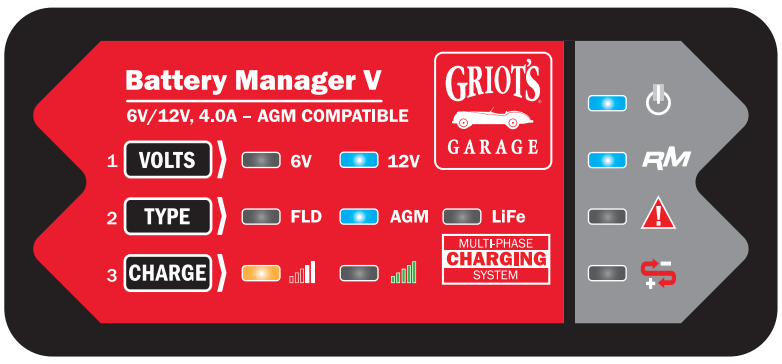
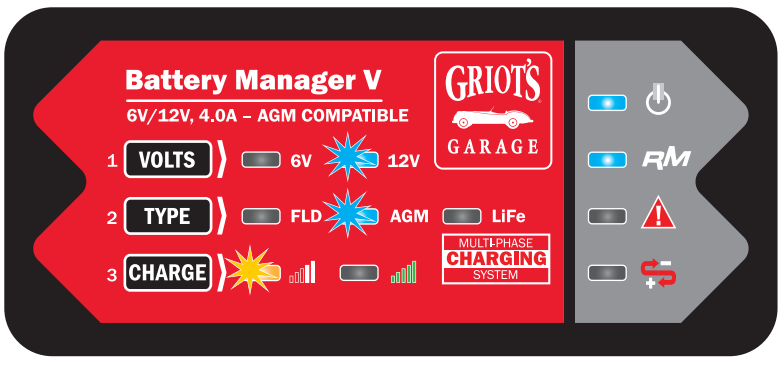




	LIGHTS	CAUSE	SOLUTION
Scenario 6 	**Error Indicator flashing quick and Charging Indicator flashing**	Charging has stopped as the charger has detected a compromised battery	Disconnect from AC power supply immediately and inspect the battery and connections. Common causes of this error include: the battery voltage does not rise appropriately during the charging process (indicating a shorted cell) or if the maximum charge time has been exceeded. Battery is damaged and needs to be replaced.
Scenario 7 	**No Lights On**	Charging Override – Full Charge Complete	After an override on a battery below 1V, once a full 100% charge is reached, the charger will automatically turn off. If the vehicle will not be used immediately, unplug the unit before plugging back in, selecting proper voltage and type, and pressing charge to initiate normal charging sequence which will cycle through all phases.
Scenario 8 	**Charging Indicator steady on**	Charging has begun – this will be the indicator during the Energizing, Fast Charge, and Absorption phases	No action necessary – charging cycle will continue unless issue is detected
Scenario 9 	**Battery Voltage Indicator, Battery Type Indicator, and Charging Indicator flashing slow**	Charging has entered Low Energy Consumption Mode – it had been 10+ minutes since charger has entered Energizing, Fast Charge, and Absorption phases	No action necessary – charger will continue charging cycle as normal with display at low energy consumption mode. At any time, you can wake the display by pressing any button one time.
Scenario 10 	**Full Charge Indicator steady on and the Charging Indicator flashing quick**	Completion Phase during charging process OR Battery is fully charged (after an override on a depleted battery)	If completion phase: no action necessary. If after an override on a dead battery: If time is critical, the battery can be put into service if it will be used in a charging situation, such as in a vehicle that will be used immediately. Otherwise, to reach a true 100% state of charge, the charger should stay connected until the charger reaches full charge at which point it will turn off automatically when the battery reaches.

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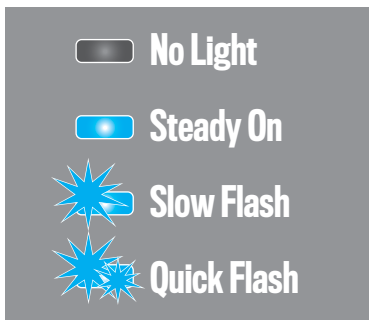
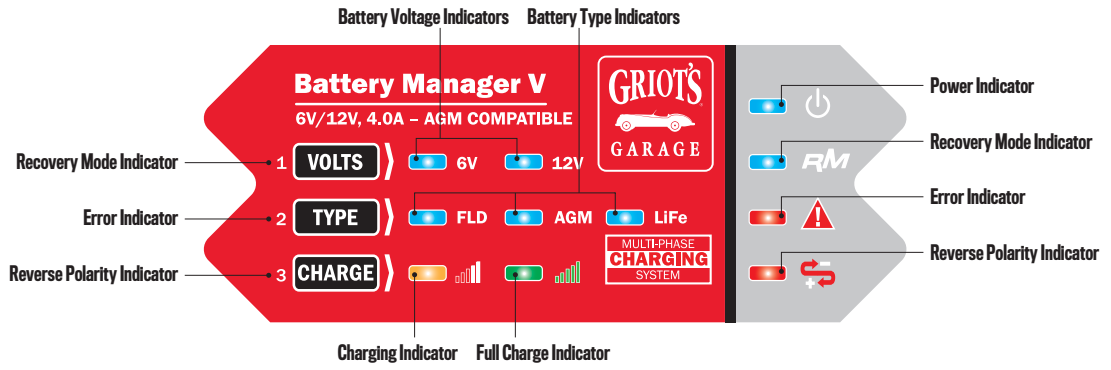
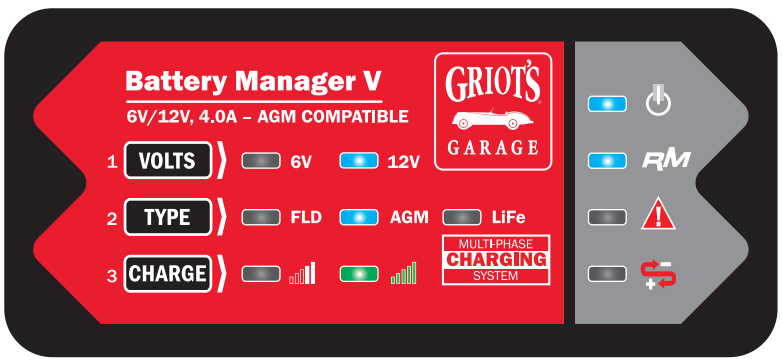
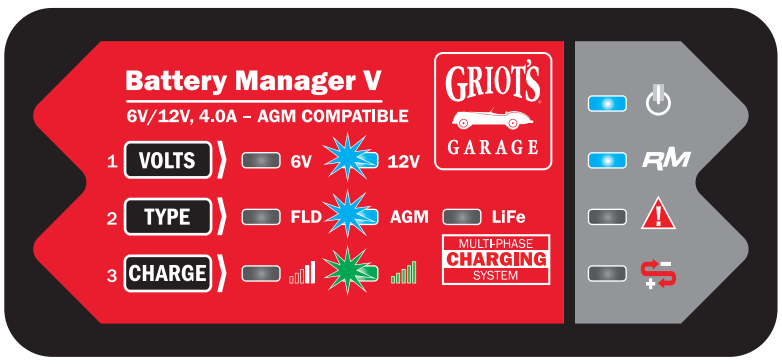
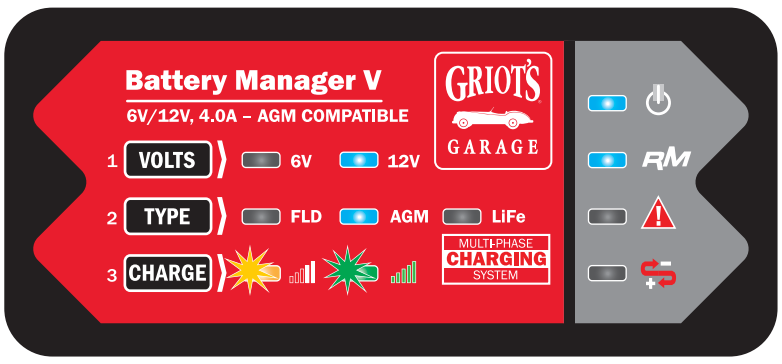
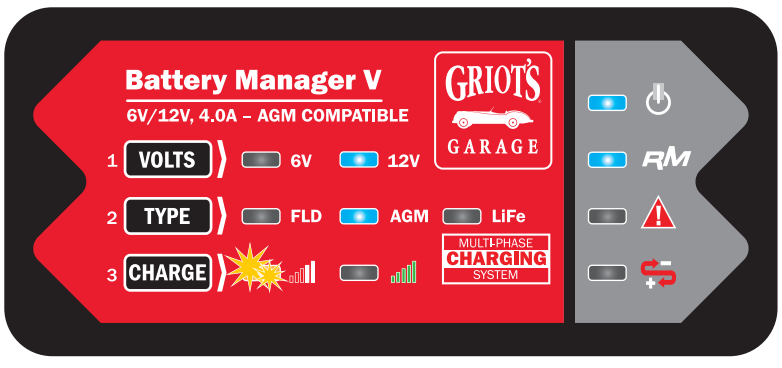
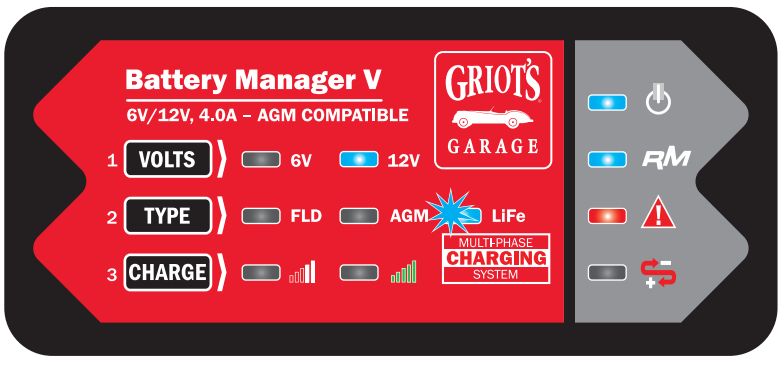




	LIGHTS	CAUSE	SOLUTION
Scenario 11 	**Full Charge Indicator steady on**	Rest Phase - output is turned off to reduce chemical reaction within the battery which greatly reduces the chance of damaging a battery in long-term storage as compared to a trickle charger that provides constant charge	No action necessary - charger will occasionally monitor battery condition and continue charging cycle as needed. After 10 minutes unit will stay in rest phase and enter low power mode - see below.
Scenario 12 	**Battery Voltage Indicator, Battery Type Indicator, and Full Charge Indicator flashing slow**	Rest Phase has entered Low Energy Consumption Mode - output is turned off to reduce chemical reaction within the battery which greatly reduces the chance of damaging a battery in long-term storage as compared to a trickle charger that provides constant charge	No action necessary - charger will occasionally monitor battery condition in a low power mode, and continue charging cycle as needed. At any time, you can wake the display by pressing any button one time.
Scenario 13 	**Charging Indicator and Full Charge Indicator alternating flashing**	Exercising Phase - slight drain is being put on battery to simulate normal use	No action necessary - after exercising phase, charging cycle will continue
Scenario 14 	**Charging Indicator flashing quick**	Battery Manager V has detected the presence of battery sulfation during the Energizing Phase	No action necessary - charge time will be extended while the charger attempts to recondition the battery
Scenario 15 - LiFePO4 BATTERIES ONLY 	**Error Indicator steady on and LiFePO4 Battery Type Indicator flashing**	Temperature Error Indicator - LiFePO4 battery or ambient temperature has been detected to be under 0°C (32°F) or over 50°C (122°F)	Charger will not initiate or resume charging process until recommended safe operating temperature is reached

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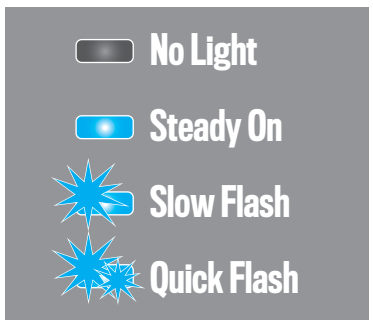
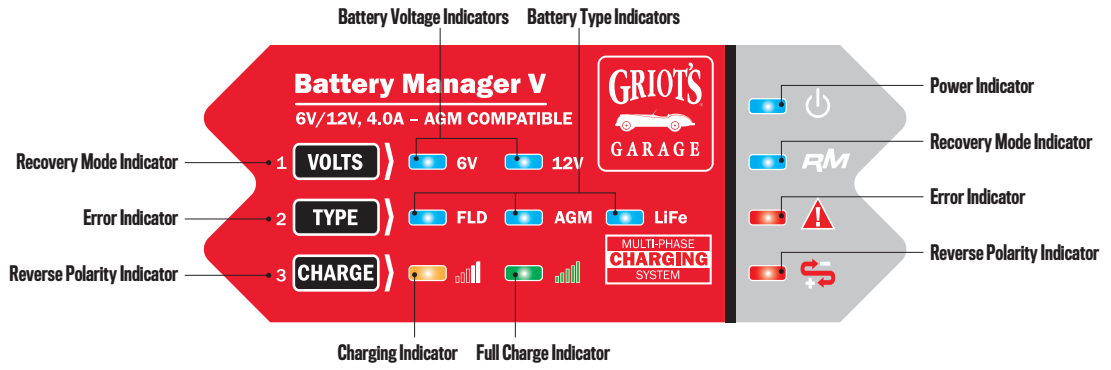
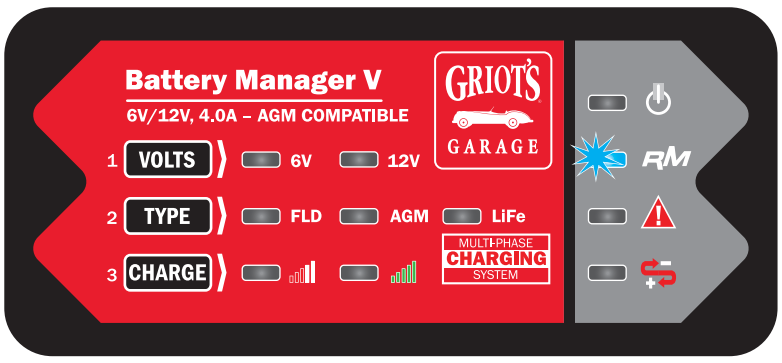
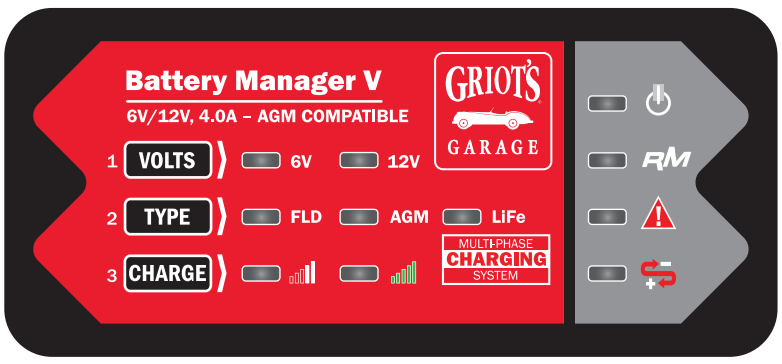
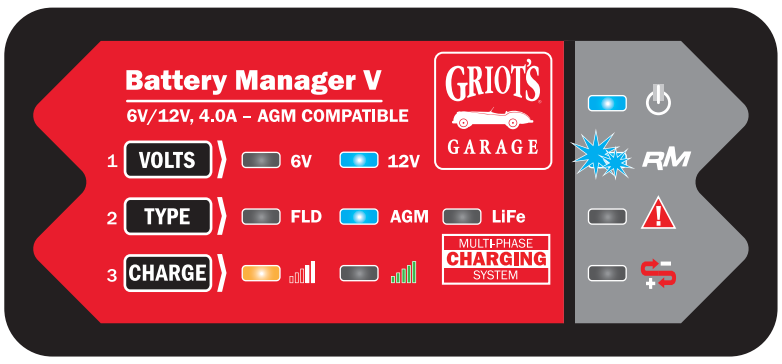




	LIGHTS	CAUSE	SOLUTION
Scenario 16 - After Power Outage with Recovery Mode On 	**Only Recovery Mode Indicator flashing slow**	Power has been lost to the charger for less than 36 hours	No action necessary - when power is restored, unit will resume charging at the same parameters set before power loss
Scenario 17 - After Power Outage with Recovery Mode On 	**No Lights On**	Power has been lost to the charger for 36 hours or longer	No action necessary - when power is restored, unit will resume charging at the same parameters set before power loss
Scenario 18 - After Power Outage with Recovery Mode On 	**Recovery Mode Indicator Flashing Quick**	Unit is in Recovery Mode - Power has been restored after loss	No action necessary - unit is assessing battery to determine best phase to resume charging process in, unit will resume charging at the same parameters set before power loss