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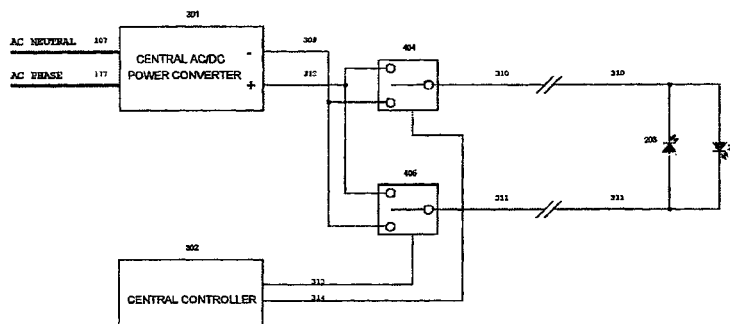
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(54) Title: SAFE TRAFFIC CONTROL SYSTEM, METHOD AND APPARATUS



TRAFFIC SIGNAL CONTROL SYSTEM

(57) Abstract: The present invention demonstrates that light-emitting diodes (LEDs) have electrical characteristics that can be used to dramatically reduce the complexity and cost of the traffic signaling equipment needed to control the array of signals to give the right of way to the vehicles in a given intersection. This also enhances the energy saving features of LEDs by relocating the power source to the traffic signal control system and the electric conditioning devices to the signal position, increasing the energy efficiency of the whole intersection. One benefit is "intrinsic safety" based on a method for power distribution to the signals that does not allow failure modes that could cause accidents. The system ensures that simultaneous green or yellow signals on crossed streets are impossible even though the signals are connected to the same power lines, allowing also the use of a bus connection topology with a command driven control of the ON/OFF state for each individual light or signal. This "phase conflict prevention" is safer and simpler than the prior art and also eliminates the need of the independent monitoring equipment usually required to prevent such hazardous conditions. Also there is a large reduction in the number of wires resulting in even greater controller simplicity due to the ability of controlling a larger number of signals with a given number of electric conductors than in the prior art.