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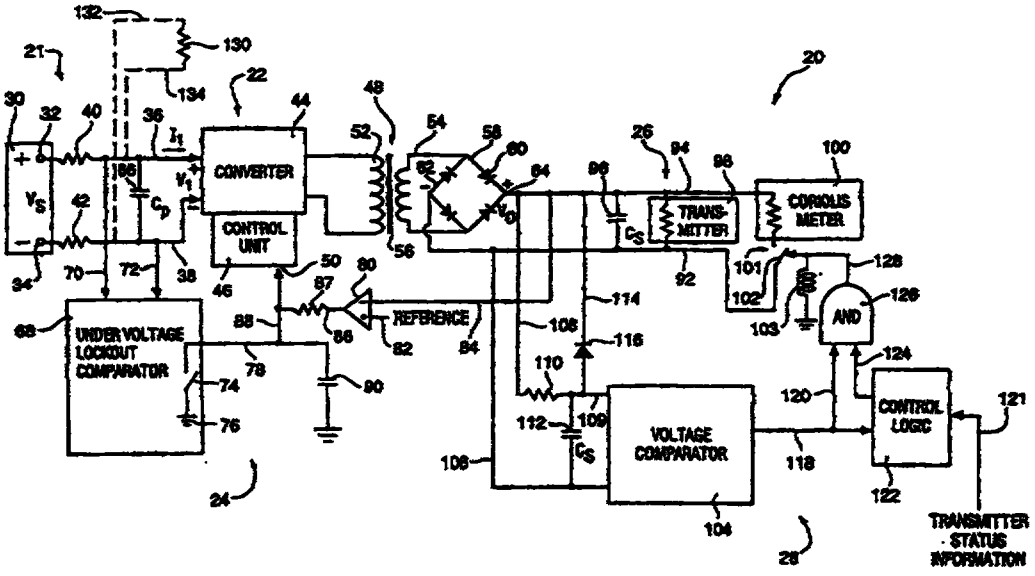

(57) Abstract

A power supply system (20) includes a power distribution circuit (21) and a power converter circuit (22), an input power control circuit (24), a power utilization circuit (26) and a utilization control circuit (28). The power distribution circuit includes some limitation in delivering power to the power converter circuit. The input power control circuit initiates and controls the start-up of the power conversion circuit. The power utilization circuit and the utilization control circuit include a first storage capacitor (96), a first load (98), and a second capacitor (112). A voltage comparator (104) monitors voltage across the second capacitor to determine when the second capacitor is fully charged. A gate (126) receives signals from the voltage comparator and status logic to cause a switch (102) closure when the second capacitor is fully charged. The closing of the switch connects a second load (100) in parallel with the first load.