and bulky component.

Aim of the present invention is to solve the drawbacks referred above.

The above aim is achieved by the present invention, which relates to a laundry treating machine comprising: a casing, a laundry drum mounted inside said casing to rotate about a rotation axis, an electric motor designed to rotate said laundry drum about said rotation axis, an inverter-based apparatus which is configured to control said electric motor and comprises: an input stage which is connected to mains lines for receiving AC lines currents and AC mains voltage and configured to convert said alternating mains voltage AC to a rectified DC voltage, an electrolytic capacitor-less inverter configured to generate output currents to be fed to said electric motor based on duty cycles of switching signals, a DC-link which connects said electrolytic capacitor-less inverter to said input stage and is crossed by DC-link currents from, or towards, said electrolytic capacitor-less inverter, a DC-link capacitor connected to said DC-link, a regulator system which is configured to control the duty cycles of switching signals based on at least a determined/estimated motor value indicative of a controlled parameter of said electric motor, and at least a motor reference value, which is associated to said controlled parameter of said electric motor, the inverter-based apparatus further comprises an active voltage limiter unit, which is configured to regulate said motor reference value in order to limit the DC-link capacitor voltage within a predetermined voltage range.

Preferably, said determined/estimated motor values correspond to said output currents, said motor reference values correspond to said current references, said laundry treating machine comprises: voltage sensor means configured to determine the amplitude of said DC-link capacitor voltage, current sensor means configured to determine the amplitude of output currents provided to said electric motor by said electrolytic capacitor-less inverter, said regulator system being configured to control said duty cycles of the switching units of said electrolytic capacitor-less inverter based on said output currents and said current references, said active voltage limiter unit is configured to regulate said current references of said regulator system in order to cause said DC-link capacitor voltage to be limited within said predetermined voltage range.