$$i_{a_{IstAbs}}(t) = w_V(t) i_{a_{MaxAbs}}$$

wherein where cov(t) is a weight coefficient that depends on: said DC-link capacitor voltage Vdc(t), a nominal DC-link voltage (Vdcnom), and a predetermined high-voltage limit (Vhigh).

Preferably, said active voltage limiter unit is further configured to determine a negative fraction of correction to be applied according to an empirical saturated-cubic equation:

$$\rho(t) = \text{sat}\left[\left(\frac{i_{a_{ws}}(t) + i_{a_{IstAbs}}(t)}{i_{a_{IstAbs}}(t)}\right)^3\right]_{-1}^{0}$$

Preferably, said active voltage limiter unit is further configured to determine unconstrained axis-wise corrections as a fraction of the maximum correction by the following equation:

$$i_{d_{unc}}(t) = \rho(t) i_{d_{max}}(t)$$
$$i_{q_{unc}}(t) = \rho(t) i_{q_{max}}(t)$$

Preferably, said active voltage limiter unit is further configured to determine constrained axis-wise current corrections by applying the following saturation and correction equations

$$i_{qcorr}(t) = \begin{cases} \max(i_{qunc}(t), 0) & if\ \omega(t) > 0 \\ \min(i_{qunc}(t), 0) & if\ \omega(t) < 0 \end{cases}$$

$$i_{d_{corr}}(t) = \min(i_{d_{unc}}(t), 0) - K_{qd}\text{abs}(i_{q_{corr}}(t) - i_{q_{unc}}(t))$$