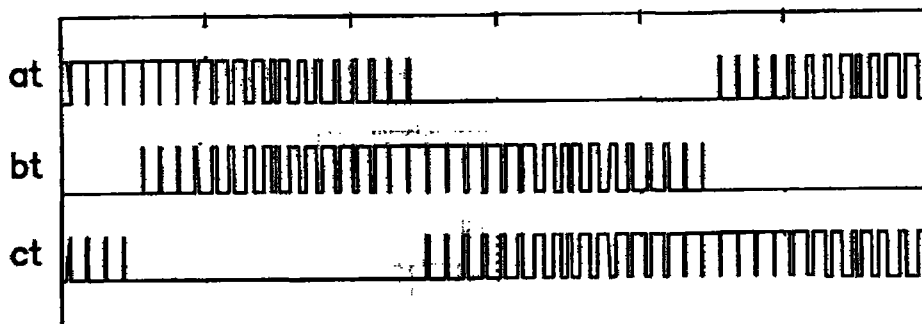




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(54) Title: CONTROL OF A DC MATRIX CONVERTER



## (57) Abstract

A DC matrix converter having six forward current conducting power switches and six reverse current conducting power switches has the on time duration of each power switch within a pulse width modulation period controlled by relationships between d and q components of a modulation index determined by the ratio of a voltage command to the instantaneous voltage of the AC mains expressed in stationary dq coordinates, the selection of which is made based on inequalities between the DC main voltage components expressed in stationary dq coordinates. Switch selection is also performed in response to relationships of the AC main voltage components expressed in stationary dq coordinates. Zero vectors are selected to minimize the common mode voltage.