

ABSTRACT OF THE DISCLOSURE:

APPARATUS AND METHOD FOR CONTROLLING DRIVE OF THREE-PHASE MULTIPLEX WINDING MOTOR

In vector control apparatus and method for a three-phase multiplex winding motor, a plurality of inverters are installed, each inverter operatively driving a corresponding one of multiplex windings of the motor and a plurality of inverter controllers are installed whose number corresponds to that of the inverters. Each controller includes: a decoupling voltage calculator for calculating d-axis and q-axis voltage setting values V_{1d}^* and V_{1q}^* on the basis of an excitation instruction value I_o^* , a torque instruction value I_r^* , d-axis-and-q-axis current instruction values i_{1d}^* and i_{1q}^* which are quotients of the excitation instruction value I_o^* and the torque instruction value I_r^* divided respectively by the multiplex number N of the windings of the motor, and a power supply frequency ω which is an addition of a slip frequency ω_s to a rotor revolution frequency ω_r ; a d-axis-and-q-axis current controller for performing P-I calculations for respective deviations between d-axis current instruction value i_{1d}^* and its detected value i_{1d} and between q-axis current instruction value i_{1q}^* and its detected value i_{1q} so as to derive d-axis and q-axis voltage errors ΔV_{1d} and ΔV_{1q} ; and a plurality of PWM circuits, each receiving d-axis and q-axis voltages V_{1d} and V_{1q} as d-axis and d-axis voltage instructions and generating and outputting gate signals to the corresponding one of the inverters, the d-axis and d-axis voltages being respective additions of the d-axis and q-axis voltage setting values V_{1d}^* and V_{1q}^* to the d-axis-and-q-axis voltage errors ΔV_{1d} and ΔV_{1q} .

(Figure 8)