

ABSTRACT

The embodiments of the present invention provide a drive system and an inverter which are able to perform sensorless control with stability.

A drive system of an embodiment includes an electric motor M; an
5 inverter main circuit 50 that outputs an alternating electric current for driving the
electric motor M; a detector 80 that detects an electric current value of the
alternating electric current output from the inverter main circuit 50; an electric
current command generator 10 that generates an electric current command
value corresponding to an electric current to be supplied to the electric motor M;
10 a gate command generator 40 that generates a gate command of the inverter
main circuit 50 so that the electric current command value matches the electric
current value; a calculator 42 that calculates an output voltage target vector of
the inverter main circuit 50; and a rotation phase estimator 70 that calculates a
rotation phase estimation value of the electric motor M based on the electric
15 current value and the output voltage target vector, in an initial estimation of when
activating the inverter main circuit. The electric current command value in the
initial estimation is a value to supply an electric current for magnetically
saturating a rotor of the electric motor, and in the rotation phase estimator, a
dynamic inductance of the electric motor M used for calculating the rotation
20 phase estimation value is a value of when the rotor of the electric motor M is
magnetically saturated.