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Becker et al.(10) **Pub. No.: US 2022/0360203 A1**(43) **Pub. Date: Nov. 10, 2022**(54) **DRIVE SYSTEM AND METHOD FOR
CONTROLLING A SYNCHRONOUS MOTOR
HAVING SEVERAL PHASES****Publication Classification**(51) **Int. Cl.****H02P 21/14** (2006.01)**H02P 29/024** (2006.01)(52) **U.S. Cl.****CPC** **H02P 21/14** (2013.01); **H02P 29/024**
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A drive system and method for controlling a synchronous motor having several phases, in which a method for controlling a drive system includes a synchronous motor having several phases comprises the steps: providing appropriate operating parameters for the synchronous motor by processing an input of the drive system; in case of a determination of a fault of one of the phases, calculating a zero sequence voltage for a neutral conductor based on motor parameters estimated by a parameter estimation algorithm based on detected operating parameters; and applying the calculated zero sequence voltage to the neutral conductor.

