

## (19) United States

# (12) Patent Application Publication (10) Pub. No.: US 2022/0352805 A1

#### Nov. 3, 2022 (43) **Pub. Date:**

### (54) POWER CONVERSION SYSTEM

(71) Applicant: MEIDENSHA CORPORATION,

Tokyo (JP)

Inventors: Ryuichi OGAWA, Numazu-shi,

Shizuoka (JP); Masashi TAKIGUCHI,

Fuji-shi, Shizuoka (JP)

(73) Assignee: MEIDENSHA CORPORATION,

Tokyo (JP)

Appl. No.: 17/771,629 (21)

(22) PCT Filed: Aug. 18, 2020

(86) PCT No.: PCT/JP2020/031082

§ 371 (c)(1),

(2) Date: Apr. 25, 2022

(30)Foreign Application Priority Data

Oct. 30, 2019 (JP) ...... 2019-196876

#### **Publication Classification**

Int. Cl. (51)H02M 1/00 (2006.01)H02M 5/42

(2006.01)

(52)U.S. Cl.

CPC ...... H02M 1/0012 (2021.05); H02M 5/42 (2013.01)

#### (57)ABSTRACT

In apower conversion system having a fixed pulse pattern modulation unit 2 that is configured to refer to tables storing therein pulse patterns that determine respective command voltage levels corresponding to phase information for each modulation ratio and to generate a gate signal g on the basis of a command modulation ratio d and a control phase  $\theta$  and driving a power converter 3 on the basis of the gate signal g, the fixed pulse pattern modulation unit 2 is further configured to, when performing a pulse pattern transition, search for a proper post-transition table reference position and make a command voltage level follow a command voltage level of a post-transition pulse pattern. With this, the power conversion system that can perform the pulse pattern transition without current impulse and that can also be applied to a multi-level power converter having four levels or more can be provided.

