



US 20240223177A1

(19) **United States**

(12) **Patent Application Publication**
Chen et al.

(10) **Pub. No.: US 2024/0223177 A1**

(43) **Pub. Date:**
Jul. 4, 2024

(54) **OVERLOAD PROTECTION METHOD FOR SOLID-STATE CIRCUIT BREAKER, SOLID-STATE CIRCUIT BREAKER AND POWER DISTRIBUTION SYSTEM**

(30) **Foreign Application Priority Data**
Oct. 15, 2021 (CN) 202111202979.7

Publication Classification

(51) **Int. Cl.**
H03K 17/08 (2006.01)

(52) **U.S. Cl.**
CPC **H03K 17/08** (2013.01)

(57) **ABSTRACT**
An overload protection method for a solid-state circuit breaker is disclosed. The method includes: measuring a temperature of a power electronic switch in a solid-state circuit breaker; detecting an overload current flowing through the solid-state circuit breaker; determining an overload trip time of the solid-state circuit breaker according to the temperature and the overload current; and switching off the power electronic switch after the trip time. In addition, a solid-state circuit breaker and a power distribution system are also disclosed.

(71) Applicant: **Schneider Electric Industries SAS**,
Rueil Malmaison (FR)

(72) Inventors: **Jiangang Chen**, Shanghai (CN); **Jihua Dong**, Shanghai (CN); **Ying Shi**,
Shanghai (CN)

(73) Assignee: **Schneider Electric Industries SAS**,
Rueil Malmaison (FR)

(21) Appl. No.: **18/563,256**

(22) PCT Filed: **Oct. 9, 2022**

(86) PCT No.: **PCT/CN2022/123937**
§ 371 (c)(1),
(2) Date: **Nov. 21, 2023**

