US 20220360147A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2022/0360147 A1**

Kisch et al. (43) **Pub. Date: Nov. 10, 2022**

(54) **EXTERNAL ROTOR DEVICE HAVING INTEGRATED SENSOR SYSTEM, AND USE**

(71) Applicant: **ebm-papst St. Georgen GmbH & Co. KG**, St. Georgen (DE)

(72) Inventors: **Michael Kisch**, St. Georgen (DE); **Jens Löffler**, Villingen-Schwenningen (DE); **Marcus Hellmann**, Unterkirnach (DE)

(21) Appl. No.: **17/641,934**

(22) PCT Filed: **Sep. 11, 2020**

(86) PCT No.: **PCT/EP2020/075466**

§ 371 (c)(1),
(2) Date: **Mar. 10, 2022**

(30) **Foreign Application Priority Data**

Sep. 12, 2019 (DE) 20 2019 105 035.7

Publication Classification

(51) **Int. Cl.**
H02K 11/215 (2006.01)

(52) **U.S. Cl.**
CPC ***H02K 11/215*** (2016.01)

(57) **ABSTRACT**

The invention relates to an external rotor device with a rotor housing designed to receive at least one rotor and with at least one sensor magnet provided on the rotor housing. The sensor magnet is arranged/can be arranged in sensory correlation with and in a predefinable relative position relative to the rotor. According to the invention, the external rotor device is characterised in that the external rotor device has at least one ring which is integrally formed on the rotor housing, the ring having at least one pocket which is arranged to receive the sensor magnet, the sensor magnet being arranged/arrangeable in the pocket in such a way and the ring being arranged/arrangeable in a predefinable relative position relative to the rotor on/in the rotor housing in such a way that the relative position of the sensor magnet relative to the rotor in at least one spatial direction is predefined by the materially integral formation, in particular at least with regard to the radial direction and also with regard to the circumferential direction and/or the axial direction.