

Title (en)
ROTATIONAL ANGLE SENSOR

Title (de)
DREHWINKELSENSOR

Title (fr)
CAPTEUR D'ANGLE DE ROTATION

Publication
EP 3420315 A1 20190102 (DE)

Application
EP 16826067 A 20161227

Priority
• DE 102016202867 A 20160224
• EP 2016082707 W 20161227

Abstract (en)
[origin: WO2017144144A1] The invention relates to a rotational angle sensor (10) comprising: a stator element (12), which has a stator transmitting coil (20) and at least one stator receiving coil (22); a rotor element (14), which is mounted for rotation with respect to the stator element (12) about an axis of rotation (A) and which has a rotor receiving coil (28) and a rotor transmitting coil (30), which are electrically connected to each other; wherein the rotor receiving coil (28) is inductively coupled to the stator transmitting coil (20) such that an electromagnetic field produced by the stator transmitting coil (20) induces a current in the rotor receiving coil (28), which current flows through the rotor transmitting coil (30) such that the rotor transmitting coil (30) produces a further electromagnetic field; wherein the at least one stator receiving coil (22) is inductively coupled to the rotor transmitting coil (30) in such a way that the inductive coupling is dependent on a rotational angle between the stator element (12) and the rotor element (14), and the electromagnetic field produced by the rotor transmitting coil (30) induces at least one angle-dependent alternating voltage in the at least one stator receiving coil (22). The at least one stator receiving coil (22) has at least two circular-ring-sector-shaped partial windings (32a, 32b), which divide the stator element (12) into sectors, and the rotor transmitting coil (30) has an identical number of sickle-shaped partial windings (34a, 34b), which extend around the axis of rotation (A) one after the other.

IPC 8 full level
G01D 5/20 (2006.01)

CPC (source: EP KR US)
G01B 7/30 (2013.01 - US); **G01D 5/2073** (2013.01 - US); **G01D 5/2086** (2013.01 - EP KR US); **H02K 3/325** (2013.01 - US); **H05K 1/183** (2013.01 - US); **G01D 5/2046** (2013.01 - US); **G01D 2205/77** (2021.05 - EP); **H02K 3/28** (2013.01 - US)

Citation (search report)
See references of WO 2017144144A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
DE 102016202867 B3 20170406; CN 109073416 A 20181221; CN 109073416 B 20200526; EP 3420315 A1 20190102; FR 3048079 A1 20170825; FR 3048079 B1 20190913; JP 2019506611 A 20190307; JP 6605748 B2 20191113; KR 20180115705 A 20181023; US 10907992 B2 20210202; US 2019025088 A1 20190124; WO 2017144144 A1 20170831

DOCDB simple family (application)
DE 102016202867 A 20160224; CN 201680084866 A 20161227; EP 16826067 A 20161227; EP 2016082707 W 20161227; FR 1751281 A 20170217; JP 2018544487 A 20161227; KR 20187024339 A 20161227; US 201616079728 A 20161227