

Title (en)

ELECTRIC MACHINE WITH ANNULAR HEAT EXCHANGER

Title (de)

ELEKTRISCHE MASCHINE MIT RINGFÖRMIGEM WÄRMEÜBERTRAGER

Title (fr)

MACHINE ÉLECTRIQUE À ÉCHANGEUR DE CHALEUR ANNULAIRE

Publication

**EP 4014305 A1 20220622 (DE)**

Application

**EP 20735564 A 20200630**

Priority

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- EP 2020068378 W 20200630

Abstract (en)

[origin: WO2021028109A1] The present invention relates to an electric machine (1), in particular an electric motor and/or generator, comprising a rotor (2), a stator (3), a coil (5) having a plurality of windings (6), and a plurality of electrical and/or electronic power modules (7) which are each electrically connected to a winding (6), wherein an axial direction (9) of the machine (1) runs parallel to the axis of rotation (4) of the rotor (2). Improved cooling results if a heat exchanger (10) is arranged axially on the machine (1) and comprises a cooling duct ring (11), which has an axial lower face (12) and an axial upper face (13), and a connection plate (14) arranged on the lower face (12) of the cooling duct ring (11). The cooling duct ring (11) has, on its lower face (12), an axially open intake duct (17) extending in the circumferential direction (16) for conveying a coolant, and a separate, axially open discharge duct (18) extending in the circumferential direction (16) for conveying the coolant, wherein the cooling duct ring (11) has, on its upper face (13), a plurality of axially open cooling structures (25) which are adjacent in the circumferential direction (16) and through which the coolant can flow.

IPC 8 full level

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