

Title (en)

MULTISTAGE, ELECTRICALLY DRIVABLE COMPRESSOR

Title (de)

MEHRSTUFIGER, ELEKTRISCH ANTREIBBARER KOMPRESSOR

Title (fr)

COMPRESSEUR À ENTRAÎNEMENT ÉLECTRIQUE À ÉTAGES MULTIPLES

Publication

EP 4388199 A1 20240626 (DE)

Application

EP 22757944 A 20220728

Priority

- DE 102021121424 A 20210818
- EP 2022071216 W 20220728

Abstract (en)

[origin: WO2023020805A1] The application relates to a multistage, electrically drivable compressor (1) for generating compressed air for a compressed air supply system of a utility vehicle, the compressor having a cooling system (7.1) which can be operated using a fluid coolant and can be connected to a cooling system (10) of the utility vehicle. The compressor is designed as a rotary compression unit and has an electric motor (2) and an inverter (3), which is designed to supply energy and to control the electric motor in an open-loop and closed-loop manner. The compressor also has a first compression stage (4) and at least a second compression stage (5), which are connected pneumatically to an intermediate cooler (19) via a connection device (25). In order to achieve a particularly compact design and very good cooling performance, the cooling system (7.1) has a plurality of cooling elements (11a-111; 12a-12f; 13a-13e; 16, 17, 18, 19.1, 20, 21) which differ in terms of their function, arrangement and geometry, and through which the coolant can flow. Said cooling elements are arranged, at least partially, inside the housing (32) of the compressor (1), and with respect to their arrangement inside the housing (32), are at different radial distances (a1, a2, a3) from the axis of rotation (6) of the drive shaft (33) of the electric motor (2) and are arranged with their longitudinal extents in different radial orientations.

IPC 8 full level

F04C 29/04 (2006.01); **F04C 18/02** (2006.01)

CPC (source: EP)

F04B 25/00 (2013.01); **F04B 35/04** (2013.01); **F04B 39/064** (2013.01); **F04C 18/0215** (2013.01); **F04C 29/042** (2013.01)

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

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

DE 102021121424 A1 20230223; EP 4388199 A1 20240626; WO 2023020805 A1 20230223

DOCDB simple family (application)

DE 102021121424 A 20210818; EP 2022071216 W 20220728; EP 22757944 A 20220728