

Title (en)

Electric heater for vehicle ventilation systems

Title (de)

Elektrische Heizeinheit für Fahrzeugbelüftungssysteme

Title (fr)

Chauffage électrique pour systèmes de ventilation de véhicule

Publication

EP 1967398 A1 20080910 (EN)

Application

EP 07425128 A 20070306

Priority

EP 07425128 A 20070306

Abstract (en)

The heater comprises a stack of elongate heating elements (10) containing PTC plates (32) in thermal and electric contact with elongate fretted radiators (12) alternating therewith. The heating elements and the radiators have a plurality of aligned transverse holes (28, 40) defining respective transverse passages, in which are received respective helical springs (20) that are hooked at their opposite ends to rods (18) extending parallelly along the two longitudinal sides of the stack. Two brackets (22, 24) close the opposite ends of the stack and have holes (58, 60) in which the opposite ends of said rods (18) are received and retained.

IPC 8 full level

B60H 1/22 (2006.01); **F24H 3/00** (2006.01)

CPC (source: EP)

F24H 3/0405 (2013.01); **F24H 3/0429** (2013.01); **F24H 3/0435** (2013.01); **F24H 3/0447** (2013.01); **F24H 3/0476** (2013.01); **F24H 9/1818** (2013.01); **F24H 9/1872** (2013.01)

Citation (applicant)

- EP 0350528 A1 19900117 - DAVID & BAADER DBK SPEZFAB [DE]
- US 5526857 A 19960618 - FORMAN ALAN S [US]
- GB 2076270 A 19811125 - MATSUSHITA ELECTRIC IND CO LTD
- EP 1462733 A1 20040929 - VALEO CLIMATISATION [FR]
- EP 1574791 A1 20050914 - CEBI SPA [IT]
- EP 0019376 A1 19801126 - MURATA MANUFACTURING CO [JP]

Citation (search report)

- [A] EP 0019376 A1 19801126 - MURATA MANUFACTURING CO [JP]
- [A] WO 2005049349 A1 20050602 - WOORY IND CO LTD [KR], et al
- [A] EP 1327834 A1 20030716 - DAVID & BAADER GMBH [DE]
- [DA] EP 1574791 A1 20050914 - CEBI SPA [IT]
- [DA] EP 1462733 A1 20040929 - VALEO CLIMATISATION [FR]
- [DA] US 5256857 A 19931026 - CURHAN JEFFREY A [US], et al
- [DA] EP 0350528 A1 19900117 - DAVID & BAADER DBK SPEZFAB [DE]
- [DA] GB 2076270 A 19811125 - MATSUSHITA ELECTRIC IND CO LTD

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FR3032387A1; DE102011000719A1; DE112016000677B4; WO2009103106A3; WO2016128397A1; DE102009057749A1; DE102011002144A1; DE102009043040A1; DE102009043041A1; DE102009031890A1; EP2287541A2; DE102009043032A1

Designated contracting state (EPC)

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Designated extension state (EPC)

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