

Title (en)

HEATING DEVICE FOR HEATING FLUIDS AND A METHOD FOR OPERATING SUCH A HEATING DEVICE

Title (de)

HEIZEINRICHTUNG ZUM ERHITZEN VON FLUIDEN UND VERFAHREN ZUM BETRIEB EINER SOLCHEN HEIZEINRICHTUNG

Title (fr)

DISPOSITIF DE CHAUFFAGE DESTINÉ À CHAUFFER DES FLUIDES ET PROCÉDÉ DE FONCTIONNEMENT D'UN TEL DISPOSITIF DE CHAUFFAGE

Publication

EP 3096585 B1 20171220 (DE)

Application

EP 15168028 A 20150518

Priority

EP 15168028 A 20150518

Abstract (en)

[origin: US2016341419A1] A heating device for heating fluids has a flat support with a surface on which heating elements are arranged distributed over the surface area and are divided into one or more heating circuits which can be operated separately from one another. A temperature sensor device is provided with a sensor layer which covers the surface area of the heating elements. At least two sensor electrodes in an electrode layer are fitted onto the sensor layer, the at least two sensor electrodes being electrically disconnected from one another and having finger-like or turn-like sensor electrode sections which run at a distance of less than 2 cm in relation to one another. The width of in each case two sensor electrode sections which are arranged next to one another is less than 2 cm in each case. A control apparatus for evaluating the temperature sensor device is provided.

IPC 8 full level

H05B 3/26 (2006.01); **H05B 1/02** (2006.01)

CPC (source: CN EP RU US)

F22B 1/28 (2013.01 - US); **F24H 1/0018** (2013.01 - CN); **F24H 9/1818** (2013.01 - CN); **F24H 9/2014** (2013.01 - CN); **H05B 1/02** (2013.01 - RU); **H05B 1/0202** (2013.01 - US); **H05B 1/0269** (2013.01 - US); **H05B 1/0297** (2013.01 - EP US); **H05B 3/03** (2013.01 - US); **H05B 3/26** (2013.01 - EP US); **H05B 2203/021** (2013.01 - EP US)

Cited by

EP4161214A1; DE102018104371A1; DE102018213869A1; DE102018213869B4; DE102021211121A1; EP3614797A1; US11585574B2; EP3197241A1

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

DOCDB simple family (publication)

EP 3096585 A1 20161123; **EP 3096585 B1 20171220**; CN 106196560 A 20161207; CN 106196560 B 20220705; ES 2659414 T3 20180315; PL 3096585 T3 20180629; RU 2016118749 A 20171120; RU 2016118749 A3 20190905; RU 2717955 C2 20200327; US 2016341419 A1 20161124

DOCDB simple family (application)

EP 15168028 A 20150518; CN 201610480414 A 20160518; ES 15168028 T 20150518; PL 15168028 T 20150518; RU 2016118749 A 20160516; US 201615157074 A 20160517