

Title (en)

Method for operating a heating element in a motor vehicle by means of pulse width modulation

Title (de)

Verfahren zum Betreiben eines Heizelements in einem Kraftfahrzeug durch Pulsweitenmodulation

Title (fr)

Procédé de fonctionnement d'un élément de chauffage dans un véhicule automobile par la modulation de largeur d'impulsions

Publication

**EP 2299106 A3 20120718 (DE)**

Application

**EP 10008503 A 20100814**

Priority

DE 102009041749 A 20090916

Abstract (en)

[origin: EP2299106A2] The PWM based operating method involves measuring a voltage present at a heating element (R) e.g. glow plug and/or a current flowing through the heating element at specified intervals during a voltage pulse application. Measured values or corresponding values determined from the measured values are added to calculate a sum value. The sum value increases with energy fed into the heating element through the voltage pulse application. The voltage pulse application is ended when the sum value has reached a target value.

IPC 8 full level

**F02P 19/02** (2006.01)

CPC (source: EP US)

**F02P 19/022** (2013.01 - EP US); **F02D 2041/2027** (2013.01 - EP US); **F02D 2041/2051** (2013.01 - EP US); **F02D 2041/2058** (2013.01 - EP US); **F02D 2200/503** (2013.01 - EP US)

Citation (search report)

- [YD] DE 102006010081 A1 20070606 - BERU AG [DE]
- [Y] EP 1162368 A2 20011212 - BERU AG [DE]
- [A] WO 2008110143 A1 20080918 - BERU AG [DE], et al
- [A] US 2009183718 A1 20090723 - CASASSO PAOLO [IT], et al

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 SE SI SK SM TR

Designated extension state (EPC)

BA ME RS

DOCDB simple family (publication)

**EP 2299106 A2 20110323**; **EP 2299106 A3 20120718**; CN 102022245 A 20110420; CN 102022245 B 20150603; DE 102009041749 A1 20110414; DE 102009041749 B4 20130207; JP 2011064196 A 20110331; KR 20110030377 A 20110323; US 2011062138 A1 20110317; US 8269145 B2 20120918

DOCDB simple family (application)

**EP 10008503 A 20100814**; CN 201010282995 A 20100916; DE 102009041749 A 20090916; JP 2010186145 A 20100823; KR 20100090518 A 20100915; US 88167210 A 20100914