

Title (en)  
METHOD FOR THE FAILURE DETECTION OF INJECTORS IN AN INTERNAL COMBUSTION ENGINE, ENGINE CONTROL UNIT AND SYSTEM FOR CARRYING OUT A METHOD

Title (de)  
VERFAHREN ZUR AUSFALLERKENNUNG VON INJEKTOREN IN EINEM VERBRENNUNGSMOTOR, MOTORSTEUERGERÄT UND SYSTEM ZUR DURCHFÜHRUNG EINES VERFAHRENS

Title (fr)  
PROCÉDÉ DE DÉTECTION DE DÉFAILLANCE D'INJECTEURS DANS UN MOTEUR À COMBUSTION INTERNE, DISPOSITIF DE COMMANDE DE MOTEUR ET SYSTÈME POUR LA MISE EN OEUVRE D'UN PROCÉDÉ

Publication  
**EP 2906802 A1 20150819 (DE)**

Application  
**EP 13774074 A 20131004**

Priority  
• DE 102012020490 A 20121010  
• EP 2013002993 W 20131004

Abstract (en)  
[origin: WO2014056594A1] The invention relates to a method for detecting the failure of injectors in an internal combustion engine, comprising the following steps: measuring a crank angle signal; transforming the crank angle signal into the frequency range by means of a discrete Fourier transformation; switching off each injector once and in a sequential manner; detecting and storing an angle of the harmonic of the 0.5th order of the Fourier-transformed crank angle signal for each switched-off injector once and in a sequential manner; continuous detection and storage of an angle and an amount of the harmonic of the 0.5th order of the Fourier-transformed crank angle signal; continuous comparison of the continuously detected amount with a predetermined threshold value, and determining a failure of the injector when the amount exceeds the predetermined threshold value; comparing the continuously detected angle with the angles stored for each switched-off injector when a failure of the injector is detected, and identifying the failed injector with an injector, for which a matching, stored angle is found.

IPC 8 full level  
**F02D 41/00** (2006.01); **F02D 41/22** (2006.01); **F02D 41/24** (2006.01); **F02D 41/28** (2006.01); **F02D 41/30** (2006.01)

CPC (source: EP US)  
**F02D 17/04** (2013.01 - US); **F02D 41/0087** (2013.01 - EP US); **F02D 41/009** (2013.01 - US); **F02D 41/22** (2013.01 - US); **F02D 41/221** (2013.01 - EP US); **F02D 41/2451** (2013.01 - EP US); **F02D 41/3005** (2013.01 - EP US); **F02M 65/00** (2013.01 - US); **F02D 2041/224** (2013.01 - US); **F02D 2041/288** (2013.01 - EP US)

Citation (search report)  
See references of WO 2014056594A1

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

DOCDB simple family (publication)  
**DE 102012020490 B3 20140313**; CN 104838118 A 20150812; CN 104838118 B 20190118; EP 2906802 A1 20150819; HK 1213616 A1 20160708; US 2015211425 A1 20150730; US 9689329 B2 20170627; WO 2014056594 A1 20140417

DOCDB simple family (application)  
**DE 102012020490 A 20121010**; CN 201380053091 A 20131004; EP 13774074 A 20131004; EP 2013002993 W 20131004; HK 16101288 A 20160204; US 201514683640 A 20150410