

Title (en)

Glow plug deterioration determination system

Title (de)

System zur Bestimmung der Qualitätsminderung einer Glühkerze

Title (fr)

Système de détermination de la détérioration d'une bougie de préchauffage

Publication

EP 2290224 A2 20110302 (EN)

Application

EP 10251466 A 20100819

Priority

JP 2009191294 A 20090820

Abstract (en)

A glow plug deterioration determination system 1 includes: a glow plug 40; a GCU 30 that controls energization of the glow plug 40 from a power supply 10 by driving switch means T 1 to T 4 to open and close in accordance with a drive signal SI issued by an ECU 20; a self-diagnosis unit (DIU) 32 that detects an abnormality between the glow plug 40, the switch means T 1 to T 4 , and the GCU 30 and transmits a self-diagnosis signal DI to the ECU 20; and current detecting means S 1 to S 4 for detecting a plug current I GL flowing through the glow plug 40, wherein the DIU 32 includes deterioration level determining means 330 for determining whether the glow plug 40 is in a deteriorated condition by comparing a plug current converted voltage Vi that is proportionate to the plug current I GL with a plurality of voltage thresholds Vref 1 to Vref n .

IPC 8 full level

F02P 19/02 (2006.01); **F02P 17/00** (2006.01)

CPC (source: EP)

F02P 19/027 (2013.01); **F02D 2041/2058** (2013.01); **F02P 17/00** (2013.01); **F02P 19/025** (2013.01)

Citation (applicant)

- JP 2001066329 A 20010316 - NF CORP
- JP 2008031979 A 20080214 - AUTO NETWORK GIJUTSU KENKYUSHO, et al
- JP 2008297925 A 20081211 - FUJI HEAVY IND LTD
- JP 2003247721 A 20030905 - DENSO CORP
- JP 2005147533 A 20050609 - DENSO CORP

Cited by

DE102019108688B3; EP2940288A4; EP2711632A4; EP2759771A4; US9683240B2; US9453491B2; US11262393B2; JP2012233661A

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 2290224 A2 20110302; **EP 2290224 A3 20151021**; **EP 2290224 B1 20171101**; JP 2011043099 A 20110303; JP 5393341 B2 20140122

DOCDB simple family (application)

EP 10251466 A 20100819; JP 2009191294 A 20090820