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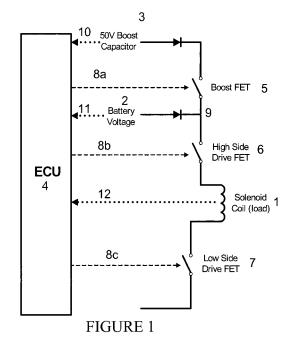
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(54) Valve control strategy and controller

(57) A controller for controlling the operation of a valve in an engine system, the valve being in communication with a battery and a further voltage supply means and comprising an actuator, the controller comprising inputs for receiving data representing the voltage across the battery and further voltage supply means and the current through the actuator; a processor programmed to determine a control function for controlling the operation of the valve in dependence on the voltage across the further voltage supply means and the current through the actuator; and outputs for outputting the control function as determined by the processor to the battery and further voltage supply means.





EUROPEAN SEARCH REPORT

Application Number EP 07 01 8287

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The present search report has been drawn	up for all claims			
Place of search	Date of completion of the	ne search		Examiner
The Hague	7 March 200	08	Mai	rti Almeda, Rafael
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EPO FORM 1503 03.82 (P04C01) **Φ**



EUROPEAN SEARCH REPORT

Application Number EP 07 01 8287

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EPO FORM 1503 03.82 (P04C01)



Application Number

EP 07 01 8287

CLAIMS INCURRING FEES
The present European patent application comprised at the time of filing more than ten claims.
Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.
LACK OF UNITY OF INVENTION
The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:
see sheet B
All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:
The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



LACK OF UNITY OF INVENTION SHEET B

Application Number

EP 07 01 8287

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-21, 24, 25

A controller for controlling the operation of a valve in an engine system, the valve being in communication with a battery and further voltage supply means, the controller comprising:

- a processor programmed to determine a control function for controlling the operation of a solenoid valve, the processor determines:
- the resistance of the actuator with data representing the voltage across the further voltage supply means and the current through the actuator
- the control function in dependance on the voltage across the battery and the resistance of the actuator.
- outputs

2. claims: 22, 23

A vehicle injection system comprising:

- at last one solenoid valve,
- a battery,
- a further voltage supply means,
- -a controller, that comprises a processor programmed to determined a control function applying a pulse from a further voltage supply means at a first voltage in a pull-in phase, and applying a second voltage potential or series of pulses at a second voltage potential in a hold phase.

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 07 01 8287

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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